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Continental warfare and British military thought 1859-1880 : how the issues were explored and their impact on change

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Continental Warfare and British Military Thought 1859-1880: How the Issues were Explored and their Impact on Change

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Abstract

Continental Warfare and British Military Thought 1859-1880: How the Issues were Explored and their Impact on Change

The purpose of this study is to look at how British soldiers reacted to the issues thrown up by the major wars which took place in this period — particularly in Europe, but with some references to America. This involves seeking answers to the following questions.

- Was the military establishment concerned by, and properly interested in, professional matters in general, and developments on the continent in particular?
- If so, how was this interest expressed? Which mechanisms were effective in nurturing this interest; feeding it with information, promoting the right climate of opinion and, crucially, leading to changes actually happening?
- Why, at the end of the day, did the British army continue to be so different?
- What does this say about the army's professionalism?

The argument is based on what soldiers said and wrote at the time. It is developed on a thematic basis, taking in turn matters relating to changing technologies, army organisation, tactics, command and leadership. It seeks to show how the reaction to these issues contributed to the army's development throughout the nineteenth century.

It concludes that the interest shown by British soldiers in these issues was deep, and that the degree of professionalism revealed was greater than they have since been given credit for. At the same time it recognises that thoughtful soldiers at the end of the period were concerned that the army of 1880 was still not capable of doing all that might be asked of it, and that it was reasonable that they should lay much of the responsibility for this on ministers who were not prepared to acknowledge the sustained level of resources required.

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Acknowledgments

When I embarked on this project we beginners were warned by the staff of the War Studies Department that research could be a very lonely business. They advised us to make the most of every opportunity to be ‘collegial’; to share our experiences and problems with our colleagues. What good advice this was. I have benefited immeasurably from the continuing friendship and support of more of the King’s community than I can possibly acknowledge here, but I must single out the following, who have all given me valuable advice directly relating to my topic; Dr Warwick Brown, Dr Bob Foley, Dr Howard Fuller, Dr Halik Kochanski, Dr Tim Moreman, Dr John Peaty, Dr Bill Philpott and Dr Robin Woolven.

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Abbreviations

ADC	Aide de Camp	MP	Member of Parliament
AG	Adjutant General	NCO	Non-commissioned officer
BEF	British Expeditionary Force	OUP	Oxford University Press
BL	Breech-loading	PPRE	Professional Papers of the Corps of Royal Engineers
CIGS	Chief of the Imperial General Staff	PRO	Public Record Office
CUP	Cambridge University Press	Proc RAI	Proceedings of the Royal Artillery Institution
DAAG	Deputy Assistant Adjutant General	psc	Passed Staff College
DAG	Deputy Adjutant General	QMG	Quartermaster General
DNB	Dictionary of National Biography ¹	RA	Royal Artillery
DQMG	Deputy Quartermaster General	RAI	Royal Artillery Institution
EHR	English Historical Review	RE	Royal Engineers
FO	Foreign Office	RHA	Royal Horse Artillery
GO	General Order	RMA	Royal Marine Artillery ²
HC	House of Commons Paper	RN	Royal Navy
HMSO	Her Majesty's Stationery Office	RUSI	Royal United Service Institution (now the Royal United Services Institute for Defence Studies)
HRH	His Royal Highness	SB	Smooth-bore
IG	Inspector General	TEWT	Tactical Exercise Without Troops
IHR	Institute of Historical Research	USM	United Service Magazine
ILN	Illustrated London News	UP	University Press (eg Indiana UP)
JRUSI	Journal of the Royal United Service Institution	WO	War Office
MA	Military Attaché		
ML	Muzzle-loading		

¹ Two sources used. The Compact Disc version is designated by DNB alone. References to the bound volumes include volume and page.

² The Royal Military Academy of the period is referred to as Woolwich, and the Royal Military College as Sandhurst.

*There will be some to say — ‘What! Is the splendidly-appointed English Army to learn from continental soldiers?’ Yes, gentlemen, we still have much to learn.*¹

The intention of this study is to examine the impact on the British army of the succession of wars which took place on the continent of Europe, and in the United States of America, between 1859 and 1880. It will look at the issues — the growth in the numbers of men under arms, the formidable advances in the technology of weapons, the revolution in means of communication; and the fundamental changes in military structure, training and tactical organisation which they brought in their train. The importance of the increasing cost of national defence arising from these requirements will come into the argument, but the main thrust of the work will be to look at the soldiers involved — how they learned about developments; how they debated the issues amongst themselves and with ministers; the extent to which the desirability, if not the pressing necessity, of responding constructively was accepted by the leadership; the impact on the careers of the officers involved, and what this has to say about the reaction of the military establishment.

A concept of serious importance to this study is that of ‘professionalism’, as applied to armies and the military art. In 1815 the small but battle-hardened British army was a sharply honed instrument of war, accepted as at least the equal in professional skills of the other antagonists of the time. A century later the British Expeditionary Force was similarly described as truly professional, if insignificant in numbers.² It is therefore one of the paradoxes of the period in between that the armies of the great continental powers, developing the revolutionary concept of ‘the nation in arms’ and based on the conscription of the country’s menfolk for a short period of service, are seen as being professional in their approach — while the British army, recruited from volunteers for a long term commitment, is represented as being conspicuously lacking in this very quality.

¹ Brackenbury, Captain CB, RA, ‘Autumn manoeuvres; considered in their place between drills and war’, lecture delivered 19 December 1870, *Proc RAI*, vol.8, 1871-2, 46.

² Strachan, Hew, *From Waterloo to Balaclava: Tactics, Technology and the British Army 1815-1854* (CUP, 1985), vii. Barnett, Correlli, *Britain and her Army* (London, Allen Lane, 1970), 371-2.

The process of examining the British army's response to the issues involved will help to explain why this is so, and the extent to which this representation is justified.

British histories of the century between the end of the Great War against Napoleonic France in 1815 and the beginning of the Great War against Germany in 1914 emphasise progress and prosperity. They talk of the wealth created by industrialisation and trade with an increasing number of colonies; of the translation of these colonies into an empire and eventually a commonwealth of nations; they take pleasure in the promotion and promulgation of liberal institutions, while ruefully admitting the growth of a smug and rather stultifying public moralism. They describe a commercial people, a nation of shopkeepers, whose mission — insofar as they had one — was to make money while leading a life of comfortable respectability. They take unqualified pride in the security which an incomparable navy conferred on this fortunate nation as it went about its business. Their references to the army, on the other hand, have tended to be equivocal at best. There is recognition of its heroic deeds in furtherance of Britain's imperial ambitions, but set against this has been an embarrassed perception that the army continued to prove inadequate when confronted by the challenges posed by European powers, usually ascribed to a lack of responsiveness by its leaders.³

During the last fifty years a new generation of historians has set out to examine the Victorian army in greater depth, and there will be many references to their work in later chapters. The American historian Jay Luvaas was one of the pioneers of the new approach. His *Military Legacy of the Civil War* first appeared in 1959, and its sub title, *The European Inheritance*, made its purpose clear. In his introduction to a new edition he emphasised the debt which he owed to the British soldiers who had written about the American Civil War; and the book which followed five years after the first, *The*

³ Two typical references; 'A hand as dead as that laid by Wellington on the British army in the years after Waterloo'; McElwee, William, *The Art of War Waterloo to Mons* (London, Weidenfeld and Nicolson, 1974), 298. 'The control of the army remained in the hands of men out of touch with, and out of sympathy with, the social and technical changes of the age'; Barnett, *Britain and her Army*, 314.

Education of an Army, focused entirely on the British soldiers whose thinking influenced the army's development between 1815 and 1940.⁴

Since these works appeared in the early 1960s there has been an increasing number of studies of the Victorian army, in particular by Professors Bond, French, Gooch and Spiers, and Doctors Howard Bailes and MD Welch.⁵ They have been looking in detail at such issues as the political background of the Cardwell reforms and the extent to which these and later reforms succeeded in their objectives, the development of officer education and the move towards the establishment of a General Staff. Much of this work has focused on the later years of the nineteenth century, largely because of the dramatic impact of the 2nd Boer War, and then on the first years of the new century, in the period leading up to the fateful commitment of the BEF to the continent in 1914. Dr Howard Bailes's thesis, 'The Influence of Continental Examples and Colonial Warfare Upon the Reform of the Late Victorian Army' and subsequent articles have been particularly enlightening, as will appear when specific issues are being discussed in later chapters.⁶

Meanwhile, Professor Strachan has shown, in a succession of books and articles, that it is misleading to see the period between Waterloo and the Crimea as simply the time of stagnation and smug complacency described, for example, by Correlli Barnett.⁷ In *Wellington's Legacy*, published in 1984, and *From Waterloo to Balaclava*, which appeared a year later, he sets out all the aspects of military life which those connected with the army were trying to improve before 1854.⁸

⁴ Luvaas, Jay, *The Military Legacy of the Civil War*, new ed. (University Press of Kansas, 1988), ix. *The Education of an Army: British Military Thought, 1815-1940* (London, Cassell, 1965).

⁵ Fourteen books and eight articles by these distinguished historians and relating to this period are included in the bibliography of the present work.

⁶ Bailes, Howard, 'The Influence of Continental Examples and Colonial Warfare Upon the Reform of the Late Victorian Army', unpublished PhD thesis, King's College, London, 1980. 'Technology and Imperialism: A Case Study of the Victorian Army in Africa', *Victorian Studies*, 24, 1, 82-104. 'Patterns of Thought in the Late Victorian Army', *The Journal of Strategic Studies*, 4,1, March 1981, 29-45.

⁷ *Britain and Her Army*, 282.

⁸ *Wellington's Legacy: The Reform of the British Army 1830-54* (Manchester UP, 1984). *From Waterloo to Balaclava: Tactics, Technology and the British Army 1815-1854* (Cambridge UP, 1985). His articles 'The British army in society', *The Historical Journal*, 22,1, 1979, 247-254, and 'The early Victorian army and the nineteenth-century revolution in government', *EHR*, 95, 1980, 782-809, are also relevant. The earlier

On the important issue of officer education, Strachan describes how a few concerned politicians and soldiers such as Gleig (the Chaplain-General), Lord Grey and Sidney Herbert worked to institute promotion examinations and training for young officers, and the establishment of Schools of Infantry and Artillery at Hythe and Shoeburyness. Another issue was the attitude of the army to the idea of a General Staff, where he shows how the experienced and many-faceted Staff for the field army which Wellington had created by the end of the Napoleonic War was allowed to decay in the years which followed, and the efforts which were being made to recover at least some aspects of a proper structure by the conversion of the old Senior Department of Sandhurst into the Staff College.

Strachan emphasises the growing awareness of the extent to which technical developments were forcing continental armies to adapt not only their tactics but also their organisations, while explaining how the day-to-day necessities of sustaining the troops in the colonies made it so difficult for the British army to respond in a coherent manner. Above all, he stresses the unwillingness of ministers to come to terms with reality where the army was concerned. ‘The army had prepared itself for war as best it could by the standards of the day, but the shifts in foreign policy were more in accordance with popular pressures than with the army’s capabilities.’⁹

A principal intention of the present study, in looking in some detail at contemporary reactions of soldiers to the challenges created by the wars in Europe (and America) during the quarter century which followed 1854, is to reinforce the work which Strachan and the historians of the later period have done to make it clear that efforts to reform the army were not just short-lived reactions to specific crises such as the Crimea and the 2nd Boer War, but a process which continued throughout the century, and beyond.

Despite the efforts of the scholars referred to there remains a general perception that the leaders of the Victorian army were lacking in professionalism when compared with

article is particularly valuable for its demolition of the description of Victorian officers in Gwyn Harries-Jenkins’s *The Army in Victorian Society*, (London, Routledge, 1977).

⁹ Strachan, *Wellington’s Legacy*, 269.

those of the other great powers, and that one of the ways that this was displayed was by an arrogant and ill-informed indifference to the changes which European armies were undergoing during these middle years of the century. There will be several examples of this attitude to the Victorian army in later chapters, usually expressed in trenchant terms, when looking at such topics as its social structure, the character of the Commander-in-Chief and the development of artillery. That this stereotypical attitude to the British soldier has not disappeared can be demonstrated by two passing observations from very recent books; Guy Hartcup, writing on *The Effect of Science on the Second World War*, declared that co-operation between scientists and the military was ‘ something unknown before 1939’, while Alex Danchev quoted two famous military commentators in one paragraph to emphasise how little professionalism there was.

As Shelford Bidwell laconically observed, ‘British soldiers are little given to theorising. Clausewitz, Jomini, von der Goltz and Hamley were read only by those eccentric enough to study their profession.’ Less a profession than a part-time employment, quipped Liddell Hart.¹⁰

It seems strange that simplistic judgments like these can have survived the efforts of the scholars referred to above, but it has to be acknowledged that the records of the time are not lacking in material which tends to support their case. The tone of such significant documents as the report of the committee investigating the management of the Crimean expedition and the Akers-Douglas committee’s analysis of the state of officer education in the immediate aftermath of the Boer War are cases in point. For example, a significant and much-quoted paragraph from the Akers-Douglas report describes the lack of a professional attitude of young officers in stark terms.

The witnesses are unanimous in stating that the junior officers are lamentably wanting in Military knowledge, and what is perhaps even worse, in the desire to acquire knowledge and in zeal for the Military art. The Committee have been informed on very high authority that the majority of young officers will not work unless compelled; that ‘keenness is out of fashion’; that ‘it is not the correct form; the spirit and fashion is rather not to show keenness’; and that ‘the idea is, to put it in a few words, to do as little as they possibly can’.

¹⁰ Hartcup, Guy, *The Effect of Science on the Second World War* (London, Macmillan, 2000), xiv. Danchev, Alex, *Alchemist of War: The Life of Basil Liddell Hart* (London, Weidenfeld and Nicolson, 1998), 175. Similarly, see Tucker, AV, ‘Army and society in England 1870-1900: A reassessment of the Cardwell Reforms’, *The Journal of British Studies*, vol.2, May 1963, 110-1 and 141.

By no part of the evidence laid before them have the Committee been more impressed than by that which shows in the clearest manner the prevalence among the junior commissioned ranks of a lack of technical knowledge and skill, and of any wish to study the science and master the art of their profession.¹¹

What has to be born in mind is that much of this language was being used for dramatic effect, to focus attention on a genuine need to make changes rather than to give a balanced account of a complicated situation. This point will be explored in chapters five and six, when issues relating to officer education, including entrance and promotion examinations, are being examined.

One of the questions at issue is how much influence the continental wars actually had on the thinking of the British army. Those who support the view that Victorian soldiers were not professional in their approach tend to play this down. AW Preston, writing on 'British military thought, 1856-1890', summarises the value of the information brought back by British observers of the American Civil War in these words; '.... there is no concrete evidence that they had any material effect, though it is possible that the authorities wasted the information that had been collected'. Of the European wars he is more equivocal. 'The Prussian Wars were not closely or critically analysed by British officers, nor did they lead to the development of any new or independent theories of war', but this is followed later in the same article by something more positive. 'Of all the British officers to study the Franco-Prussian War, and translate the various Continental interpretations, none was more decisive in consolidating the rapid transformation of official doctrine than Colonel Robert Home.'¹² Subsequent chapters in this study will elaborate on the contribution of Robert Home and his professional colleagues, and argue that the Prussian wars were in fact copiously analysed.

Constitutional questions, the relationship between monarch, government and army, and the extent to which the national budget was the decisive factor in determining

¹¹ Committee appointed to consider the Education and Training of the Officers of the Army, PP (1902), vol. X, Cd 982, 131.

¹² Preston, AW, 'British military thought', *The Army Quarterly*, vol. 89, October 1964, 63,69,72.

the army's effectiveness, must be taken into account, but the influence with which this study is principally concerned will be that exercised by soldiers on soldiers.

There were ten Secretaries of State during the period under consideration. Ambitious ministers do not seem to have regarded the post as particularly attractive, and it certainly proved to be no sinecure for the conscientious. Indeed, the first two incumbents, Sidney Herbert and Sir George Cornwall Lewis, were reported to have died from the overwork arising from their responsibilities.¹³ The gritty nature of the position was sardonically acknowledged half a century later by Campbell-Bannerman (who had had experience of the War Office as Financial Secretary under Childers in 1880) when, as Prime Minister, he appointed Haldane; 'We shall now see how Schopenhauer gets on in the Kailyard'.¹⁴ This acknowledgment, in passing, of Haldane's intellectual pretensions has some significance. There were occasions when the British Government made rather half-hearted efforts to emulate the French by appointing soldiers to this equivalent of a Minister of War; Jonathan Peel, who served briefly, in Lord Derby's Administrations of 1858 and 1866-7, was a Lieutenant-General (though it had never been his fortune to serve in war, and he had bought every step from Ensign to Lieutenant-Colonel); but in the event two different backgrounds seem to have been of more practical use for the holders of this office. Sir John Pakington, 'a conscientious and painstaking administrator',¹⁵ who was Peel's successor in 1867 (when Peel resigned because he could not support the extension of the franchise), and HCE Childers, who did so much to refine Cardwell's reforms in the light of experience, had both benefited from exposure to the way that the navy was run, by serving as First Lord of the Admiralty, much though this may have depressed senior soldiers at the time.¹⁶ Sir George Lewis and Lord Cardwell, like Haldane, were scholars as much as politicians, and the intellectual powers which they brought to bear on the problems of the army, though unqualified by previous experience of the problems involved, helped them to tackle the job with a receptive mind — and this

¹³ See their DNB entries.

¹⁴ Haldane, Richard Burdon, *An Autobiography* (London, Hodder and Stoughton, 1909), 182.

¹⁵ DNB.

¹⁶ Illustrated by the quotation from General Sir Patrick MacDougall on Childers's appointment, on page 237 of this study.

was a valuable property to have when the realities of parliamentary politics required ‘economy’ to be at the forefront of any Secretary of State’s mind.

Cardwell naturally stands centre-stage in the years with which this study is concerned, not only because he held the responsibility for six years in the middle of the period but because of the importance of the changes which the army underwent during his tenure. His contribution has been exhaustively examined by historians in recent times, and, although the effectiveness of the reforms which he achieved has been to some extent reassessed in the light of their work, it is clear that events on the continent in the period immediately before and during his incumbency had a significant impact on the determination with which he addressed problems which had been building up for years. It is important to take account of the influence of these events on the thinking of the military establishment when the achievements of Cardwell and his successors as Secretary of State are being evaluated.

To show influence at work convincingly is not always a straightforward matter. ‘Actually, even the most extreme claims of influence, when seriously pursued, almost always reveal themselves to be something far less specific’ is a warning not to be taken lightly.¹⁷ Certainly there are dangers in arguing *post hoc, ergo propter hoc*, as will be acknowledged in chapter three in the case of William Howard Russell and the needle gun. However, despite the difficulties involved, there are often sufficient pointers along the way to demonstrate a reasonable link between cause and effect in many of the issues with which this study is concerned. One such is the habit of many of the participants in the debates and decisions of the time to scribble comments in the margins of reports and books which caught their interest. This can provide evidence, not only that they had read the document in question, but that they had thought about it. Both Lord Palmerston and Viscount Wolseley will feature in this connection. Another is the frequent taking for granted, in the lectures and discussions, that a particular book or pamphlet was too well known to the audience to need more than a brief reference. Generally speaking, however,

¹⁷ Paret, Peter, ‘Napoleon and the revolution in war’, ch. 5 in *Makers of Modern Strategy* (Oxford, Clarendon Press, 1986), 141.

the claims to show what was influential will have to be based on an accumulation of evidence from debates, discussions and reports — and by inference from the career progressions of the most vociferous presenters of the issues — more than from some demonstrable direct link to a subsequent change.

In Victorian Britain ‘society’ was small. The people who were in a position to exert influence on any aspect of life tended to come from the same educational and family backgrounds and share many close connections. The officers of the army were part of this society, and the interlocking networks of their connections certainly contributed to the creation of the attitudes of mind which led to specific decisions being taken, though evidence will be produced in the next chapter to show that there was a greater diversity of background and ambitions within the officer corps than has been generally acknowledged. An investigation of the interrelationships within some of these military dynasties would be of some value, but the ramifications are too large for it to be possible to do justice to the subject within the confines of this study. However, as an illustration of the sort of connections which did exist, appendix A3 takes the Biddulph family and their circle as a case in point.

This study is based on what soldiers were writing and saying at the time, but it is recognised that some direct testimony is less reliable than others. Although there will be several references to the memoirs of some of the main actors in these events, such works, usually written years after the events which they describe, are not put forward as carrying anything like the same authority as the contemporary records. A somewhat similar caveat has to be made in the case of private letters between intimates, which seem sometimes to have been a convenient way for the writer to let off steam rather than express his reasoned opinions — an issue which will be touched upon in the next chapter.

There will also be due recognition of a tendency, known nowadays amongst professionals in the National Health Service as ‘shroud-waving’, to exaggerate the scale of difficulties and dangers in order to frighten the authorities into paying more respect to the views of the writer, and usually into handing over more money. The authors of doom-

laden ‘factional’ accounts of an unprepared country overcome by a merciless invader, exemplified by Sir George Tomkyns Chesney’s *Battle of Dorking*, and the exploitation of the invasion scare of 1859 revealed by Colonel Claremont, illustrate two aspects of this tendency.¹⁸

The subject is a broad one, and constraints of time and space dictate that the areas of military involvement in which events in Europe generated the greatest changes have to be given priority. As a result, it has not been possible to consider matters relating to supply, housing and horse-drawn transport in any detail. This has also meant that the ever-important questions of the provision of horses of all kinds and their forage can be no more than touched upon in passing.

One specific characteristic of the time needs to be noted; the tendency of many people in public life to use the word ‘English’ in circumstances where the institutions of the whole United Kingdom were involved. To those who live in Scotland, Wales or Ireland today the insensitivity involved in calling an army which was so largely recruited from those national minorities the English army seems remarkable, but it has to be acknowledged that, to almost all foreigners at least, the words ‘English’ and ‘British’ were synonymous. In this usage, as in the spelling of words like ‘organisation’, the intention in this paper will be to use the more usual modern version except when quoting directly. The spelling of foreign names presents a similar problem. Where possible the version used in the narrative here will be taken from the idiom of the country concerned; thus, the Prussian ‘Red Prince’ will be called Friedrich Carl rather than Frederick Charles.

The chapters which follow develop their argument on a thematic basis. Chapter two will look at the men who made up the officer corps of the army, the institutions within which the issues were addressed and the extent to which the leadership was prepared to

¹⁸ *The Battle of Dorking* is discussed on page 23 and Claremont’s comments on the invasion scare on page 74. Professor Strachan argues that the Schlieffen Plan may be, at least in part, a European instance of the same phenomenon, *The First World War*, vol. 1, (Oxford University Press, 2001), 166.

be responsive. Chapter three will examine the impact of changing technologies. Chapter four will concentrate on the need to change the army's structures, involving the questions of recruitment, the difficulty in designing a shape for the army which would meet requirements at home as well as overseas, and the establishment of what Spenser Wilkinson called the brain of an army, its General Staff.¹⁹ The theme of chapter five will be application in the field of the lessons learnt, including the need to improve the education and professional training of the officer corps, the necessary revolution in tactics and attempts to create some kind of coherent doctrine for an army facing such a diversity of possible problems.

Chapter six will seek to draw the threads together; the level of interest shown by the military establishment in the lessons arising from the continental wars; their response to clever officers, and particularly to officers of the Royal Artillery and Royal Engineers; the most effective influences; their impact on the organisation, equipment and doctrine of the army; and what this has to say about its professionalism.

¹⁹ Wilkinson, Spenser, *The Brain of an Army: A Popular Account of the German General Staff* (Westminster, Constable, 1895). Henry Brackenbury originated this metaphor of the Staff as the brain of an army, as Wilkinson acknowledges on page 39.

Chapter 2

The Army

The chapters which follow will be concerned with the issues which arose from the continental wars. This chapter will look at people and institutions. The people are those who were directly concerned by the need to react to the rapid changes taking place in the techniques and tools of war, and the institutions those which provided the forums within which such needs could be examined. It will consider

- the soldiers, and others, who studied the issues
- how much encouragement they received from their superiors, and the climate of opinion within the army in general
- those who were in a position to act on the information — the establishment
- those who could develop the ideas — the professors and instructors, the writers and debaters amongst the active soldiery
- the means by which ideas were disseminated and debate promoted.

Most of the chapter will be concerned with the activities of military men; how those who advocated radical change related to the rest of the officer corps and the means by which proposals for change were put forward; but there were also voices outside the army eager to express their opinions on how the army should react to continental developments. The nature of their contribution, and the reaction of the military, will be briefly considered first.

At this time the readership of newspapers was expanding rapidly and the formidable editor of *The Times*, John Thadeus Delane, had every reason to be confident of his power to influence opinion in every aspect of public life.¹ Where military matters were concerned this had been greatly enhanced by two recent developments, the appointment of special correspondents to report on foreign wars and the establishment of a network of electric telegraphs to facilitate the rapid transmission of their contributions. There had been an early demonstration of this power in the Crimean campaign. The devastating

¹ Hudson, R (ed), *William Russell Special Correspondent of The Times* (London, Folio, 1995) quotes President Lincoln's recognition of this power, 171.

despatches from William Howard Russell and Thomas Chenery provoked huge public indignation about the disorganisation of the army's supply arrangements and the lamentable conditions under which the troops had to live. As the century moved on, the increasing ability of newspapers to give their readers rapid and dramatic eye-witness accounts of battles and campaigns helped to enhance the reputations of their correspondents and reinforce the ability of editors to express trenchant views about matters relating to the army. At moments of perceived crisis these interventions made a significant impact on the climate of opinion in the country. During the invasion scare of 1859-60, for example, *The Times* gave sustained encouragement to the development of the Volunteer movement, and a few years later agitated strongly (if inaccurately) for the adoption of breech-loading rifles.² Ministers throughout the period showed their awareness of the extent to which such campaigns could influence public opinion, and were not above exploiting them for their own purposes.³

Captain Colomb, a powerful advocate of the 'blue water' thesis (that the navy could be depended upon to protect the shores of Britain as well as the country's overseas interests, and that there was no case for diverting scarce resources to equipping the army for more than a subordinate share in this commitment) expressed his alarm that the public were being dangerously influenced by the colourful reporting of the war correspondents.

Every volunteer from the Land's End to the Orkneys, every militiaman from Dover to Donegal, is the apostle of a purely insular theory of defence, the practical preacher of *purely* military precautions: Russell, from nearly all battle-fields of modern times: Hozier, from 'the mountains of Rasselas'; Brackenbury, from the plains of Italy; and Forbes, from the ruins of Sedan, have so stirred the heart of England that her head has well nigh ceased to

² Encouragement of the Volunteer Rifle Corps was notably carried on by *The Illustrated London News*, which featured regular weekly accounts of the activities of individual units. *The Times's* contribution to the development of breech-loaders is discussed in chapter 3, 121-4.

³ For instance, the impact on public opinion, and eventually British policy, of the reports in *The Daily News* in 1876 of the atrocities being committed by the Turks on the Bulgarian populace is described in Mathews, Joseph J, *Reporting the Wars* (Minneapolis, University of Minnesota Press, 1957), ch.9, and bolder claims for their influence can be found in Archibald Forbes's *Memoirs and Studies of Peace and War* (London, Cassell, 1895), 16. For an example of Ministers' willingness to plant material in *The Times*, see Ramm, Agatha, (ed.) (*The Gladstone - Granville Correspondence* (Cambridge University Press, 1998), no.671, 313.

regard the influence of water as practically ruling the whole principle of her own and that of her Empire's defence.⁴

But were the military themselves noticeably susceptible to this sort of influence? On the whole the evidence suggests that they were not. From time to time there were rueful acknowledgments that, particularly where money matters were involved, the power of the press was undeniable, as Major-General Sir Lintorn Simmons admitted in 1871.

He was sorry to say that changes almost invariably involved expenditure of money, which was the great obstacle to their adoption. Unless an idea was well written up in the papers — and he doubted very much whether such a proceeding was within the province of an officer — it was difficult to press it home.⁵

Sometimes, indeed, officers were glad to record their gratitude for the attentions of the press, even when the reputation of the army was being called in question. The Crimean War is a case in point. On the one hand Lord Raglan, feeling that Russell's explicit reporting gave aid and comfort to the enemy, had written sadly home to the Secretary for War that '.... the innocency of his intentions does not diminish the evil he inflicts', but, in contrast, Sir Evelyn Wood, looking back on the Crimea later in life, declared of Russell that '.... by awakening the conscience of the British nation to the sufferings of the troops he saved the remnant of those grand battalions'.⁶

More often, however, soldiers were irritated by the way that the papers presented military matters, and scornful of what they saw as a shallow and unprofessional attitude to complex problems. Major-General FM Eardley Wilmot (a noted reforming gunner), speaking in the same debate as General Simmons, clearly enjoyed general support when he declared that '.... (junior officers) might hear and see in the newspapers all sorts of quack propositions (laughter) — for increasing, controlling, re-organising, and bothering the army in all manner of ways (laughter and applause). The army wanted to improve itself'⁷

⁴ Colomb, Captain JCR, RN, 'Naval Intelligence and protection of commerce in war', *JRUSI*, vol.25, 1881, 553.

⁵ *Proc RAI*, vol.7, 2 Feb. 1871, 365.

⁶ Cook, Sir Edward, *The Press in Wartime* (London, Macmillan, 1920) 16, 8.

⁷ *Proc RAI*, vol.7, 2 Feb. 1871, 365.

The professional soldier's reaction to the writings of the war correspondents was neatly summed up in a letter which the veteran Field Marshal Sir John Burgoyne wrote to another old soldier, Lord de Ros, at the height of the Franco-German War in December 1870, which merits quoting at some length because it offers practical suggestions about what military attachés, as well as correspondents writing from the field, ought to concern themselves with.

I have in a general way formed very much the opinion you have on the value as a military study of the information we usually get from the correspondents of the press with the armies in the field; the very expression of their letters being so *graphic*, is with me, condemnation; as a soldier, I want what is *instructive*, not what is *graphic*.

Nor do I attach any value to reasonings on the great strategical movements, by those present, whether civilians or military men. What they see is in very small limits, and what they hear from those about them, is quite untrustworthy I quite agree however with what I understand to be your view, which is to turn the attention of our military attachés and correspondents to objects in details which they can themselves observe, or on which they can obtain on the spot, correct information, that would be of great interest to us.⁸

Issues affecting the army were inevitably of concern to thoughtful civilians, at this time of almost constant warfare in Europe and North America as well as in the rapidly-expanding Empire. Many members of the two Houses of Parliament had held commissions in the army or were active members of the Militia and Volunteers, and they did not hesitate to intervene in what they considered an authoritative manner when debates about the service took place. The opinions of such men, including John Holms, Sir Charles Trevelyan, Lord Elcho and Viscount Melgund, will have their place when specific issues are discussed in later chapters.

Friedrich Engels holds a prominent place amongst the many contributors outside Parliament. Although better known for his radical political views, he was acknowledged to be something of a military expert, particularly where German interests were involved. (In addition to serving as a volunteer in the Prussian Guards Artillery in 1841-2, he had

⁸ Burgoyne to de Ros, 13 December 1870. Quoted in Wrottesley, Lieut.-Colonel the hon. George, *Life and Correspondence of Field Marshal Sir John Burgoyne, Bart.* (London, Richard Bentley and Son, 1873), 441-2.

fought under Franz Sigel in the abortive revolt in the Bavarian Palatinate and Baden in 1849.) He strongly espoused the cause of the Volunteer movement in response to the 1859 invasion scare, contributing pieces to the *Pall Mall Gazette*, the *Manchester Guardian*, and the *Volunteer Journal* (not to mention the *New York Daily Tribune* and the *Allgemeine Militärzeitung* of Darmstadt). His views on all aspects of military organisation and thought were well reasoned, but his judgments and predictions on the broader strategic issues, such as the pattern and outcome of the 1866 war, were often completely wrong.

Sir George Tomkyns Chesney, although in fact a professional soldier (and the brother of the influential Colonel Charles Chesney), falls into a somewhat similar category. He rose to the rank of general in a distinguished career, but his reputation with the public at large rests on one work, his famous ‘Battle of Dorking’, which first appeared as a long article in *Blackwood’s* in May 1871. I F Clarke has described and analysed the impact which this fictional account of the subjugation of an inadequately defended Britain had on a public still recovering from the shock of seeing France overwhelmed by Germany; on the Prime Minister’s fury; on the swathe of imitators; on the inevitable reaction against it.⁹ In the end, despite describing the sensation which it caused, his verdict is that ‘...there is no evidence that his story had any influence on the reorganization of the army’.¹⁰ Curiously, a decade earlier, Sir James Fergusson, General Sir John Burgoyne and Colonel JA Ballard had all tried to influence public opinion by publishing articles which used much the same technique to show that Britain would be powerless to withstand a French invasion, but without achieving the same dramatic impact.¹¹

The importance of periodicals such as *Blackwood’s* in providing a forum for officers like these to put forward their views, to influence their colleagues, the

⁹ Clarke, IF, *Voices Prophesying War: Future Wars 1763-1984* 2nd. Ed. (London, OUP, 1992), ch.2.

¹⁰ Ibid., 42. There can be no denying, however, that it was a huge popular success.

¹¹ Fergusson, J, ‘The invasion of England’, *The Quarterly Journal*, vol. 16, July 1859, 245-84.

Burgoyne, Sir John, ‘Our Volunteers’, *Cornhill*, vol.I, Jan. 1860, 77-84.

Ballard, JA, ‘National defences and Volunteers’, *Blackwood’s*, vol.88, August, 1860, 135-54.

government or the public at large will be considered later in this chapter. First, it is time to look at the military themselves.

The Commander-in-Chief. His Royal Highness the Duke of Cambridge was the holder of this office throughout the period of the continental wars.¹² As professional head of the army he was the focal point for the army's views on the need for reform, but also the officer ultimately responsible for executing the government's decisions in that respect. His own position on these matters, and his temperament, were therefore crucial when it came to bringing influence to bear and to reacting to it. This makes it important to try to identify the rôle which he played at the time.

Prince George of Cambridge was born in Hanover in 1819 (the same year as his cousin Victoria), where his father, seventh son of King George III, was at the time Governor General; and his mother was a daughter of the house of Hesse Cassel. Both these circumstances, his close relationship with Queen Victoria and his German connections, have a significance when his character is being explored. On the one hand he was a devotedly loyal upholder of the dignity of the British crown and a staunch patriot; on the other, he felt a strong affinity with his German relations, and his early military education followed a pattern similar to that of many German princelings. In 1836 he was put under the charge of a Military Governor, Colonel Cornwall of the Coldstream Guards, and entered as a cadet in the Guards of the Hanoverian army.¹³ A year later the death of his uncle King William IV precipitated major changes. Victoria became queen in England, their uncle Cumberland king of Hanover, and George's father ceased to be Governor General. George was therefore given a brevet Colonelcy in the British army and sent, still under the direction of Colonel Cornwall, to Gibraltar, where he was attached to the 33rd foot to 'learn my duty with them'.¹⁴

It is noteworthy that none of his contemporaries, even those, like Wolseley, who

¹² Strictly speaking, the title was General Officer (later Field Marshal) Commanding in Chief, until 1887.

¹³ Sheppard, Edgar, *George Duke of Cambridge*, 2 vols. (London, Longmans, 1906), 30-1.

¹⁴ *Ibid*, 55.

clashed bitterly with him, ever accused him of being other than a loyal, hard-working, well-informed and generally well-loved soldier. At the same time, however, he has been traditionally represented as the epitome of conservatism, a died-in-the-wool reactionary, totally opposed to any alteration in the army's traditional ways. Peter Boroughs, in his chapter of *The Oxford History of the British Army*, sums up this common attitude in a sentence; 'Reformers also encountered on many issues a resuscitated complacency and conservatism at the Horse Guards under the Duke of Cambridge'.¹⁵ Winston Churchill was decisive in his verdict; 'The Commander in Chief, the Duke of Cambridge, was opposed to any reform whatever....'.¹⁶ Joseph Lehmann's judgment was that '....the strongest foe of army reform and Wolseley's personal *bête noire* was Prince George, Duke of Cambridge'.¹⁷

Some of the fiercest verdicts are to be found in the relevant volume of the original *Oxford History* series; Ensor's *England, 1870-1914*. Ensor's six references to the duke create a devastating picture of a '....sworn foe to all progress' and one who, although never accused '....of serious corruption, ... had nearly every other disqualification for his post.'¹⁸ Ensor was writing as long ago as 1936, but his influence continues. In 1999 Major Kevin W Farrell presented his doctoral thesis to Columbia University on 'The Military and the Monarchy: The Case and Career of the Duke of Cambridge in an Age of Reform', which he said gave a new and more accurate view, not only of Cambridge but also of the relationship between the Crown, Parliament and the army. Dr Farrell has carefully studied the royal archives, and particularly the correspondence between Cambridge and Queen Victoria, but his judgments are heavily based on Ensor, and his conclusion, that Cambridge's career was an unqualified disaster for the British army, is sadly simplistic.¹⁹

¹⁵ Chandler, David (ed.), *The Oxford History of the British Army* (OUP, 1996), 185.

¹⁶ Churchill, Winston, *A History of the English-speaking Peoples* 4 vols., (London, Cassell, 1958) vol.4, 227.

¹⁷ Lehmann, Joseph, *All Sir Garnet*, (London, Cape, 1964), 16.

¹⁸ Ensor, 16n, 9, 11, 130, 220, 290.

¹⁹ Farrell, Kevin W, 'The Military and the Monarchy: The Case and Career of HRH George Duke of Cambridge in an Age of Reform (unpublished PhD thesis, Columbia, 1999). His enthusiastic view of Ensor is declared on page 324. His unremittingly negative opinion of the duke permeates the thesis. For an example of his simplistic approach, see pages 78-9, where he says that, in the class-ridden Victorian army, no gentleman would consider serving in the artillery or engineers.

This assessment of the duke seems, in fact, to have become as deeply embedded in the folklore of the Victorian army as that attitude to Earl Haig which the likes of Alan Clark and Denis Winter have perpetuated, and which a generation of serious academic historians has struggled to refute.²⁰ In the case of Cambridge, while historians such as Edward Spiers, Hew Strachan and Albert Tucker have examined his contribution in a more balanced manner,²¹ other writers continue to take it for granted that he can be dismissed as an irredeemable reactionary.²²

There is another side to the picture, but it has been allowed to go largely by default. Sir Willoughby Verner produced his *Military Life* in two large volumes immediately after the duke's death, and this is an excellent source of material for the student of the period, but it was written so soon after the events themselves, and by a player in the game, that it has not been accepted as an objective assessment of the duke's contribution.²³ More recently, Giles St. Aubyn's more readable account, *The Royal George*, has emphasised the duke's attractive domestic and social life without contributing much new material from the duke's own writings, which fill the pages of Verner's book.²⁴ When these are allowed to speak for themselves, and are set alongside what he said in committees and seminars, a more complicated and much more sympathetic character emerges.

Before the evidence is examined it would be sensible to look briefly at the relationship which the duke had with his successor, the man whom Lehmann has called

²⁰ A recent contribution to this reappraisal is Dr Gary Sheffield's introduction to his edition, with John Bourne, of *Douglas Haig: War Diaries and Letters 1914-1918* (London, BCA, 2005).

²¹ Spiers, 'The Late Victorian Army', ch.9 of *The Oxford History of the British Army*, 191. Strachan, *Wellington's Legacy*, 169. Tucker, AV, 'Army and Society in England 1879-1900', *Journal of British Studies*, vol.2, no.2, May 1963, 110-41.

²² Recent examples include Powell, Geoffrey, *Plumer: The Soldier's General* (Barnsley, Pen and Sword, 2004), 12, and Jackson, General Sir William, and Field Marshal Lord Bramall, *The Chiefs: The Story of the United Kingdom Chiefs of Staff* (London, Brassey's, 1992), 8, '.... The Duke of Cambridge, who always claimed that he disapproved of all change on principle', a comment recently mirrored in a review by one Robbie Millen in *The Spectator* of 11 December 1999, 61.

²³ Verner, Col.W, *The Military Life of HRH George Duke of Cambridge*, 2 vols. (London, Murray, 1905). What a debt of gratitude researchers owe to Verner for absolving them from the pain of reading so much of HRH's vile handwriting. Dr Edgar Sheppard's two volume biography, *George Duke of Cambridge* (London, Longmans, 1906), supplements Verner with a memoir of the duke's ceremonial and private life.

his *bête noire*, Viscount Wolseley. Wolseley's biographers have made much of the antipathy between these two.²⁵ Wolseley himself was the main source for this view, and there are certainly many references, in his private papers and diaries rather more than in his writings for publication, in which he claimed that the commander-in-chief was trying to keep him out of the way or block his career. However, several of his public statements attest to a happier relationship.²⁶ It cannot be denied that such public shows of respect were typical of the forms of behaviour of the age, often more diplomatic than heartfelt — but many Victorian public figures were prickly characters, distinctly emotional in the way that they expressed themselves in private, particularly when they felt that their merits were not sufficiently recognised by those in authority.²⁷

Wolseley was certainly an emotional man, driven by ambition and a conviction of his potential to achieve great things, and intolerant of those whom he thought of as standing in his way. His letters, to his wife, brothers and intimates, and the notes in his private papers, contain many denunciations of his superiors in the service, not just as unfit for their jobs but also as enemies determined to block his progress, as well as condemnation of potential rivals as charlatans. In 1879, for instance, when the government, gravely concerned by the succession of political and military failures in tackling the Zulu irruption, entrusted him with the responsibility of bringing the crisis to an orderly conclusion, his letters home to his wife show this tendency at work. On 31 October he wrote; 'It requires a stronger man than I am to pursue the line I had marked out for myself — I must wait for some big event before I can afford to show up HRH of

²⁴ St. Aubyn, Giles, *The Royal George 1819-1904; The Life of HRH Prince George Duke of Cambridge* (London, Constable, 1963).

²⁵ For example, Lehmann, 161 and Edward Spiers in ch.9 of *The Oxford History of the Army*, 194. Arthur, Sir George (ed.), *The Letters of Lord and Lady Wolseley 1870-1911* (London, Heinemann, 1922), v-vi. Wolseley's influence on his younger contemporaries contributed. When reading Maurice denouncing the obscurantism of the Horse Guards under Cambridge ('The War Office and the Army', *Quarterly Review*, vol.183, 1896) it is salutary to bear in mind the extent to which Wolseley was his mentor and inspiration. Similarly, it must be noted that Robert Biddulph, Cardwell's private secretary and biographer, was a lifelong friend and colleague of Wolseley's.

²⁶ For example, his article in *The Nineteenth Century*, vol. 3, March 1878, 438.

²⁷ This tendency of stressed public figures to relieve their emotions is not unknown even today, as Alanbrooke's wartime diaries show. See Jenkins, Simon, 'Wartime heroes who make pygmies of us all', *The Times*, 18 May 2001, 18.

Cambridge and the lot of incapables he delights to honour.’ On 16 November he declared;

I know that Ellice (the Adjutant General) hates me with all the hatred of jealousy and I feel a pleasure in telling him he belongs to a lot of fellows called Generals who are useless. He has not one war medal, yet he is the man who thinks he should be preferred before me as C in C in India.

Eight days later he returned to the theme.

I am very much put out by a telegram I have just received from the Horse Guards saying that Baker Russell must either rejoin his Regt. in India forthwith or be seconded. This is a piece of spite on the part of Ellice, Horsford and Co to annoy me and one of those who are regarded as ‘Wolseley’s men’.²⁸

These were his private thoughts. His many contributions to public debate were more measured — but his willingness to publicise his opinions, particularly when these were at variance with those of the establishment, portray him as an unruly subordinate and an uncomfortable colleague; yet he felt betrayed when any of those whom he thought of as his own protégés showed signs of independent ambitions.

Given these characteristics, it not surprising that Cambridge and Wolseley each found the other difficult to work with, yet the record of their association suggests a more complex relationship than the writers mentioned above have recognised, and a degree of mutual respect. Over the years they worked together for long periods, exchanging reasoned views, arguing often but sometimes agreeing on important issues. Correspondence continued between them for thirty years and in general it reflects well on the professionalism of both soldiers. The duke has left on record his pleasure in the fact that, in his retirement, Wolseley took pains to call on him regularly and keep him abreast of what was going on.²⁹

On the broadest matters of army organisation and national defence, their written views resemble each other rather more than some of the comments referred to above

²⁸ Wolseley Papers in Hove Central Library. WP/8 (1879).

²⁹ Arthur, *Wolseley Letters*, vii.

would lead one to expect, and, if the private expressions of Wolseley's more splenetic comments had received less attention, subsequent historians might have given Cambridge's contribution to serious debate more credence. For example, if Wolseley's seminal article in *Macmillan's* in April 1871 (the year when, as Assistant Adjutant-General, he became part of the establishment) on 'Our military requirements',³⁰ is set beside the duke's long memoranda of November 1870, 13 December 1875, and 24 October 1876, to the Secretary of State for War, the similarities in approach to the major issues are apparent.³¹ There is not space here to make the comparison in detail, but it does appear that more research into their relationship might contribute to a timely reappraisal of the duke's general contribution.

Some positive aspects of the Duke's vision of the requirements of the army have been noted from time to time, both by contemporaries and by more recent writers. Hew Strachan refers to him as a reformer in *Wellington's Legacy*, and Wheeler, in *The War Office Past and Present*, praises his early contribution, and there is no doubt some significance in the fact that both these references are to his early years in office.³²

Cambridge's views on a variety of military topics appear in later chapters, often supported by the approbation of men such as Charles Chesney, FJ Graves, WR Mansfield (Lord Sandhurst) and Spencer Walpole. On many issues he was certainly to be found among the conservatives; on the constitutional position of the army *vis-à-vis* Parliament and the Crown, on purchase and promotion, on some details of training for staff and intelligence departments, and on short service — but he always gave his reasons in honest and principled terms, and when his fears were proved wrong his mistake was often handsomely acknowledged.

His views on many other issues; on the size of the army, its principal tasks, the need for professional training, the crucial importance of realistic manoeuvres and training in large formations (this is the man accused of only being interested in seeing soldiers in

³⁰ Wolseley, Garnet, 'Our military requirements', *Macmillan's*, vol.23, April 1871, 524-36.

³¹ Quoted in Verner, vol.II, 38-44 and 96-100.

pretty uniforms on barrack squares),³³ the rôle and arming of cavalry, on opposing the reversion of the artillery to muzzle-loading, and even on the merits of field entrenchments — in all these cases he will be found in the ranks of those who were forward thinking, and often at a surprisingly early date.

In such matters he was strongly influenced by military developments in Europe. He attended the manoeuvres of the Prussian army whenever he could, commenting shrewdly on what he saw, and his letters and memoranda are full of references to the need for the British army to take due note of what was being achieved. A typical example is this letter to Lord de Grey in February 1864, at the time of the invasion of the Danish Duchies.

Look at what the Continental Armies have just accomplished. Within the last month the Prussian troops have been placed partly on the war footing, and within a fortnight a Corps of Austrians and Prussians of at least 50,000 men have been transported and are at this moment on the Eider, with heavy reserves prepared to follow should the necessity arise. It may be said that the French are doing nothing and that their position and ours, as great European Powers, is to some extent identical. Outwardly they show no symptom of preparation, but I venture to say, that their organisation is such that *within one fortnight* they could collect and mass a large Army on the Rhine, besides having an available force at hand for other contingencies. Now, if we look at what we can do, we literally can do nothing but call out our Militia and recruit up as fast as the labour market will permit us to obtain men.³⁴

In addition, he was an assiduous President of the Royal United Service Institution, and recorded in his diary the importance which he attached to lectures at which he presided on such matters as the Austrian manoeuvres and the significance of the newly created Intelligence Department.³⁵

³² Strachan, 103 and Wheeler, Owen, *The War Office Past and Present* (London, Methuen, 1914), 169.

³³ Spiers, *Oxford History of the British Army*, 191. Lehmann, 160. Cambridge did enjoy such occasions, but not to the exclusion of more realistic manoeuvres. It is notable that Baron Stoffel, praising the Prussian King Wilhelm's qualities as a truly professional soldier, could have been describing Cambridge when he included among his special virtues his incessant inspections of the troops and his regular attendance at the fortnightly meeting of the Military Society. 'Reports on the Military Forces of Prussia', *Fraser's*, Nov. 1871, 557.

³⁴ Verner, vol.1, 287. For examples of visits to the Prussian manoeuvres see Sheppard, vol.1, 80 and 218, and vol.2, 82.

³⁵ Sheppard, vol.2, 4 and 34.

He was by no means perfect. In particular he lacked the sustained moral courage to stand up to prolonged and embarrassing clashes with powerful opponents. An exchange of memoranda with General Peel, the Secretary for War, in 1866 illustrates both these aspects of his character, a clear perception of the army's needs coupled with an unwillingness to undertake the tough business of fighting to achieve it. His initial memorandum, undated, shows his awareness of the potential threat posed by developments on the continent, the pressing need for an adequate Reserve, to be built up by offering shorter service with the colours in exchange for a commitment to serve in that body, and for the Militia to be brought to a higher state of efficiency by regular training alongside regular troops under the guidance of suitably qualified half-pay officers. Peel's reply, dated 30 November 1866, spelt out the extent of the political opposition which such changes would provoke, and the duke's immediate reaction was to back off, and recommend that other officers should be consulted before any detailed plans were put forward.³⁶

Like his mighty predecessor Wellington, he stayed in his post too long, after the energy and inclination to fight for reforms had ebbed; but, for all his faults, his contribution was more positive than his detractors have allowed — as his response to some of the specific issues examined later will show.

The military establishment In 1859 the senior ranks of the army still included a handful of veterans of the Napoleonic Wars; Sir John Colborne (Lord Seaton), epitome of the regimental fighting soldier, was commanding the forces in Ireland, Sir John Fox Burgoyne was Director of Fortification and Sir George Wetherall Adjutant General. The influence of such experienced men was strong. Ministers and Commander in Chief naturally sought their advice on how to address the problems confronting the army in the aftermath of the Crimea and the Mutiny, and under renewed pressures arising from threats of invasion. Bruised though the reputations of this generation of officers had been by the recent demonstrations of the army's deficiencies, it would be wrong to regard them as unthinking reactionaries. In particular, Burgoyne took pains to keep himself

³⁶ Verner, vol.1, 297-304.

abreast of developments on the continent and in America, as will be seen in later chapters.

Some interesting comparisons can be made with their immediate successors, men such as Sir John Scarlett and Sir Richard Airey (Lord Airey). Scarlett, like Colborne, had achieved fame as a fighting soldier, and stood high in public estimation, even after the Crimea. Airey, like Burgoyne, had been severely, and unfairly, blamed for the army's shortcomings, but in both cases they rapidly recovered the respect of their colleagues. Airey can be described as one of the last of the old school, in that he had made every step in rank from Ensign to Lieutenant-Colonel by purchase, yet Wolseley (not, as has been noted, a man to whom praise of his superiors came easily) described Airey, Adjutant General during the years of the Cardwell reforms, as

....the wisest and ablest soldier it was ever my lot to do business with. Indeed, I never knew anyone in our Army who was better fitted for high military command. He had very justly great influence with the Duke of Cambridge who, recognising his ability, leaned much upon him.³⁷

It is significant that Airey's final service to the army was to chair the Committee on short service which reported in March 1880, when he was seventy seven.

The senior ranks of the army certainly did include men whose negative qualities merited the criticisms of the reformers. Sir William Mansfield (Lord Sandhurst), who commanded the forces in India from 1865-70 and in Ireland between 1870-75, was a clever man, but he crucially lacked the ability to work comfortably with subordinates. His DNB entry quotes this devastating assessment of him by one of his contemporaries, Colonel George Malleon;

He had that within him to procure success in any profession but one. He was not and could not become a great soldier. His vision, indeed, was so defective that he had to depend for information regarding the most trivial matters upon the reports of others. He disliked advice, and, although swayed perhaps too easily by those he loved and trusted, he was impatient of even the semblance of control from men brought into contact with him only officially and in a subordinate position.³⁸

³⁷ Wolseley, *The Story*, vol.2, 242-3.

³⁸ Wolseley, in *The Story*, vol.1, 336, corroborates this judgment.

Yet even Mansfield was sometimes willing to accept the need to introduce new methods, as his positive reaction to Henry Brackenbury's exposition of the new tactical formations dictated by battlefield realities in 1873 illustrates.³⁹ Throughout this period the army continued to produce officers who found it difficult to see the need for change — men like Frederick Thesiger — but the rising generation threw up a growing number of officers whose minds were receptive to the new climate, and who had the determination to press their views on the establishment.

Whether this was as difficult a task as Cambridge's eventual successor, Wolseley, made out can be questioned, but his commitment to the process cannot be denied.⁴⁰ His convictions about the direction which the British army should take were of course coloured by the fighting which he had seen at first hand (and his only direct experience of European war was as a young man in the Crimea) but as he gathered about him the group of talented young officers who came to be known as the 'Wolseley Ring' this body contained many of the men whose studies of continental armies are reflected in the detail of the subsequent chapters of this thesis. The body within which such officers had to make their mark and influence the direction of the service, the officer corps of the army, must now be examined.

The officer corps. Some twenty thousand officers served in the Regular army during the twenty-one years with which this study is specifically concerned.⁴¹ The careers of the vast majority of these men were devoted to regimental duties, much of the time a long way from home, and the impact of their individual activities and opinions was confined within that limited sphere. Their collective importance was another matter, and much has been written to suggest that the Victorian officer class could be defined in terms of certain easily identifiable characteristics which were shared by all — or at least by all who had any hope of making a success of their careers. These included a common social background, a public school education, an innate distaste for anything smacking of

³⁹ See reference on page 221.

⁴⁰ Admirably demonstrated by Halik Kochanski's PhD thesis and subsequent book.

⁴¹ At any one time there were about nine thousand on the active list, and the average length of service was approximately twenty years.

intellectualism, a conservative approach to life and an aversion to change, particularly if it directly affected their own way of life in the regiment. In 1999 Gerard DeGroot, writing on Haig's rise to high command, summed up this verdict in the following terms.

The British Army of the late Victorian period mirrored the stratified society of which it was a product. Almost invariably only a certain type ever joined the officer corps and only an even more select type was promoted to high command..... Technically-minded middle class individuals who might have aided the Army's modernization either did not join or were not given much encouragement when they did. With individuality and imagination suppressed and cleverness deemed suspect, the institution remained safe and supreme.⁴²

These characteristics, and the assumptions on which their identification is based, must now be examined in order to establish the extent to which they governed the army's reaction to the continental wars.

The method used for this purpose will be to look at the careers of a selection of officers, one hundred and twenty-five in all, who had some impact on the development of the army during this period or later.⁴³ This is a small sample out of twenty thousand and it cannot claim to be fully representative of the whole body, not least because these men were distinguished from the mass by reason of their responsibilities or because their opinions appear during analysis of specific issues in later chapters. Nevertheless, they provide an opportunity to make some detailed observations about the characteristics in question. Generally speaking, only officers who were promoted beyond the confines of regimental duty are listed, but there are a handful of exceptions, including Lieutenant-Colonel Loyd-Lindsay, *VC* (Lord Wantage), Captain Evelyn Baring (Lord Cromer) and Major Gonville Bromhead, *VC*. Only those who held commissions within the period are included (so, for example, Field Marshal French, Generals Plumer and Horne are in, but

⁴² DeGroot, G, ch.3 in Bond, B and Nigel Cave (eds.), *Haig: A Reappraisal 70 Years On* (Barnsley, Leo Cooper, 1999), 39. See also Harries-Jenkins, Gwyn, *The Army in Victorian Society* (London, Routledge, 1977) for a sustained argument to this effect, epitomised by a quotation from Correlli Barnett on page 276. A more balanced view can be seen in Bond, Brian, *The Victorian Army and the Staff College, 1854-1914* (London, Eyre Methuen, 1972), ch.1 and ch.3, Strachan, Hew, 'The British Army and Society', *The Historical Journal*, vol.22, 1979, 251, and the same author's *The Politics of the British Army* (Oxford, Clarendon Press, 1997), ch.2.

⁴³ Referred to hereafter as the base group. The accumulated career details of these officers are set out in appendix B4. The information has been compiled from army lists and the DNB.

Field Marshals Haig and Wilson, who were not commissioned until 1881 and 1882 respectively, are out).

The first issue relates to social background. Was it true that British officers all sprang from the gentry, and that other classes, in particular the middle classes, were excluded? In one hundred and eight cases the broad social status of the officer's father has been established. All concerned came from an educated background (including Colonel Sir Francis Bolton, the only one of the group commissioned from the ranks), but biographers have used an interesting variety of ways to classify the fathers. It must be acknowledged that the categories used here can overlap and conceal within themselves a wide diversity in rank and status. For example, military officer ranges from Lieutenant (the Brackenburys) to Field Marshal (General Sir John Ross); cleric can be simple vicar (Lieut.-General Sir John Ardagh), bishop (Chaplain-General George Gleig) or vicar and baronet (Field Marshal Sir Evelyn Wood). Similarly, the category of gentleman is not a very precise concept, but in this context it serves to describe fathers who lived in comfortable circumstances, generally in the country rather than the town, and who have not been recorded as having engaged in any income-earning capacity.⁴⁴

By pursuing this process in some detail it is possible to make a comparison between those who served in the cavalry, guards or line regiments and those who served in what have been variously described as the scientific and ordnance corps, the Royal Artillery, Royal Engineers and their colonial equivalents. It will be seen in later chapters of this study that officers from these corps played a disproportionate part in addressing the issues arising from continental developments, and in considering why that should have been so comparisons of this kind will play their part. In the matter of social background it can be seen from the following table, which summarises the records set out in appendix B4, that there was little significant difference between those commissioned in the

⁴⁴ In Britain there was nothing directly equivalent to the continental rank of nobility, attaching to whole families, usually signified by a *particule*, an honorific prefix such as *von* or *de*, and carrying with it certain privileges and duties. This is not to deny the prevailing British snobbery relating to 'trade', well illustrated by two comments of Wolseley's on the composition of the messes of a certain cavalry regiment (the 'Trades Union') and the 90th Light Infantry, his own regiment ('a home for gentlemen'). *The Story of a Soldier's Life*, vol. 1, 83, 84.

ordnance corps and the others. The one exception is in the number of aristocratic parents, but this can be simply explained by the fact that the ‘other’ category (as the cavalry, guards and infantry will be referred to for convenience) includes the Household Troops.⁴⁵

These statistics support the view that the army in general recruited its officers from a privileged class of society, but contradict the opinion that gentlemen would not consider a career in the artillery or engineers.

Next is the issue of education. Where the information is available (eighty-six of the officers in question) once again there is a general similarity between the ordnance corps and the others. What is notable is that in each case more than half were educated privately, or at grammar schools, and only thirty-six went to public school. Of the thirty-nine where the details have not been found, it is reasonable to assume that most of these did not go to public schools, either, since this is not something which biographers tended to overlook. It has to be said, therefore, that if these officers shared a moral code and a common attitude to life it was not because they had all been to the same schools. Similarly, the type of school which they went to does not seem to have had much bearing on their progress in the army.

	<u>RA/RE</u>	<u>Other</u>	<u>Total</u>
Father's status			
Military/Naval officer	22	18	40
Royal	1	1	2
Aristocrat	1	10	11
Gentleman	11	15	26
GP	3	0	3
MP	2	2	4
Cleric/Academic	6	8	14
Other professional	2	1	3
Merchant/Planter	3	2	5
<u>Not recorded</u>	<u>7</u>	<u>10</u>	<u>17</u>
TOTAL	58	67	125

⁴⁵ Where Royalty is involved, if foreign princes had been included in the list, counting the French Prince Imperial's training would have given the ordnance corps a two-to-one advantage over the others. Professor Strachan makes the point, in *The Legacy*, 140, that the lack of opportunities to purchase promotion in these corps might have been attractive to ‘ the impoverished sons of a nobleman’.

	School		
Public	15	21	36
Private	25	20	45
Abroad	2	3	5
<u>Not recorded</u>	<u>16</u>	<u>23</u>	<u>39</u>
TOTAL	58	67	125

	Method of Entry		
Sandhurst	0	15	15
Woolwich	47	0	47
Addiscombe	4	0	4
Militia	0	2	2
Direct	1	36	37
Special Direct	6	0	6
<u>Not recorded</u>	<u>0</u>	<u>14</u>	<u>14</u>
TOTAL	58	67	125

Next to be considered is their method of entry to their profession. Most of the cavalry, guards and infantry officers joined their regiments direct, either from school, generally by purchase until 1872 but sometimes (like Wolseley) through official patronage, or by transferring from the Militia. Only fifteen entered the army through Sandhurst. In the ordnance corps, where there was no purchasing of commissions, forty-seven out of fifty-eight entered through Woolwich and four passed through the East India Company's school at Addiscombe into the Bengal army. The remaining seven joined their service directly. One of these, Colonel Sir Francis Bolton, was appointed from the ranks to the Gold Coast Artillery on 4 August 1857, but the six others owed their commissions to the peculiar circumstances created by the Crimean crisis.

It had rapidly become apparent that there was a serious shortage of officers to replace gunner and sapper casualties or fill the specialist functions required by what amounted to siege warfare. To a limited extent the gaps could be filled by seconding energetic officers such as the young Wolseley from other branches of the service,⁴⁶ but it was clear that emergency measures had to be taken to increase the stock of specialists.

⁴⁶ Wolseley, *The Story of a Soldier's Life*, vol.1, 114.

Accordingly, a series of expedients was adopted to augment the flow of suitable young men into the two services. These *ad hoc* measures have not been easy for subsequent researchers to disentangle, but the records of cadet entries to Woolwich at the time help to unravel their complexities. Appendix A1 describes these expedients in more detail. Here it is only necessary to make a distinction which has confused some biographers, between those who were commissioned directly, without enrolment in the body of Gentlemen Cadets, and those who spent some time at the Academy, albeit in the Practical Class, before becoming officers.⁴⁷ There seem to have been forty-seven of the direct category, and the careers of two of this group, Major-Generals Sir Robert Murdoch Smith and Sir Charles William Wilson, will be referred to later, to illustrate the way that the establishment made use of the particular talents of clever officers.⁴⁸

The ease with which this could be done in practice was partly a result of the different structure of the Royal Engineers and Royal Artillery, compared with the rest of the service. The ordnance corps, like the navy, commissioned their officers into a general pool, whereas those who served in cavalry and infantry units were commissioned into particular regiments. For the average officer, the summit of whose ambition would be to rise to the command of his regiment or battalion, his status and in particular his seniority within that ‘family’ were all-important. His status depended largely on his social skills in fitting in with his brother officers, and, except in a handful of supremely self-confident regiments such as the Rifle Brigade, this tended to encourage a conformity to a comfortable social style which, coupled with years of regimental routine, could easily depress any talents to perform on a wider stage.⁴⁹ This focus on the regiment has

⁴⁷To illustrate the problem, Colonel Robert Home’s entry in the DNB says that ‘.... when, for a short time during the Crimean War, commissions in the artillery and engineers were thrown open to public competition without the necessity of passing through the Royal Military Academy at Woolwich, he succeeded in obtaining one in the royal engineers’ This is wrong. Home was one of a batch, which included Henry Brackenbury, who joined the Practical Class at Woolwich as cadets before passing out to their commissions. Further details are given in appendix A1.

⁴⁸ Sir Robert Murdoch Smith’s DNB entry says that he passed first out of forty-six who joined by this method, but the present writer believes that altogether forty-seven officers were so commissioned. See Appendix A1.

⁴⁹ The curator of the South Wales Borderers’ Museum in Brecon commented to the present writer that the distinguishing characteristics of junior officers who subsequently achieved command of their battalion were to have served either as adjutant or musketry instructor, rather than in extra-regimental activities.

continued to be both a strength and a weakness of the British system.⁵⁰ In many ways it suited the governments of the time to foster it, but the stultifying effect on the outlook of generations of regimental officers cannot be overlooked.

For such officers their position in the regimental pecking order was vital to their ambitions, something about which they had to think very carefully before accepting any post outside the regiment which could jeopardise it.⁵¹ This is of course a broad generalisation and there were many exceptions, for reasons which will be examined a little later, but this pressure was less important in the case of the engineers and artillery. These officers knew that their careers would be spent in many different units and that it was not so important to consolidate their position within one small group of colleagues. Also, and crucially, because they had all been required to demonstrate their intellectual powers in a competitive environment before they were commissioned (in most cases over a protracted period of training at the Academy) those with potential could often be identified at an early stage — and this potential might be exploited in a variety of ways.

The importance of this must be emphasised. In a competitive environment the ambitious have to find a means to distinguish themselves from their fellows, and one of the issues with which this study deals is the reaction of the military establishment in general to those who concerned themselves with the need for change in order to respond to continental developments. Were their views readily welcomed? Did they thereby gain positions of influence, and, if so, what impact did they have? Alternative ways of achieving early recognition must be at least briefly examined so that comparisons can be made, and the career details of the officers listed in appendix B4 provide some facts to work on.

The Actuaries' Report in Appendix C of the Penzance Report of 1876 gave the following figures for the length of time which it took for an officer to reach the regimental rank of Lieutenant-Colonel, averaging the figures over thirty years, as

⁵⁰ For a vivid description of the continuing force of this attitude see Holden Reid, B, *Studies in British Military Thought: Debates with Fuller and Liddell Hart* (Nebraska UP, 1998), 9-10.

Household Cavalry	24 years 8 months
Cavalry	20 years 4 months
Infantry	23 years 6 months
Foot Guards	29 years 4 months

There were no figures for the artillery and engineers, but the records of the officers in this study's appendix B4 offer some statistics for comparison. Taking the average of the thirty-four commissioned from Woolwich who achieved the regimental rank (excluding the Royal Duke) gives a figure of twenty-three years and eleven months. Within that bald figure there are a few notable variations. Sir Robert Biddulph gained this promotion exceptionally early, after ten years and six months of service, while Sir FM Eardley Wilmot took twenty-seven years and eight months, and Sir Frederick Maurice no less than twenty-eight years and five months, but the other officers are clustered closely round the average time — and there remains a strong correlation between their place in the order of merit when passing out of Woolwich and the date of their promotion to Lieutenant-Colonel, regardless of their achievements on the broader stage during the intervening years. More significantly, such distinguished soldiers as Grierson, Home, Kitchener, Gordon, Nicholson and Callwell are not recorded as ever having held the regimental rank at all.

The implication is clear. While regimental promotion prospects in the artillery and engineers were similar to those in the other arms, this was not in itself a reliable indicator of either the progress of an able officer in the service or of the influence which he might exert. How, then, did such a man make his mark, while still young? Distinguished service in the field was the most obvious route, and for a young man this usually meant the display of conspicuous bravery under fire. Ambitious men like Wolseley accordingly sought every opportunity for action.⁵² Those who were lucky and determined enough to seize the chance, and survive, gained a double benefit — particularly if they were involved in a major campaign — because their gallantry usually led to their being taken out of their immediate environment and given an early opportunity to demonstrate other skills. The

⁵¹ Bond, Brian, *The Victorian Army and the Staff College* (London, Eyre Methuen, 1972), 68.

⁵² Wolseley, *The Story*, 41-2.

practical advantages of this can be demonstrated from the careers of the officers in the base group.

This introduces the question of promotion by brevet. Throughout this period the military establishment was unwilling to interfere with seniority within the regimental environment, partly to eliminate the possibility of favouritism (and a vestigial fear that this could lead to a clique taking the army over for political advantage) and partly, until 1872, so as not to upset the orderly procedure for the buying and selling of commissions. The method for bringing on officers whom the authorities wished to encourage was to give them a step in rank in the army by brevet promotion. This applied to elevation to the ranks of Major, Lieutenant-Colonel and Colonel. The men so distinguished enjoyed the status of their brevet rank in the army in general (and a pay scale between that of their regimental and army ranks), but when serving with their own unit ranked as the junior officer at their brevet level. Officers who performed gallantly in the field almost invariably received a step by brevet. Thirteen of the base group were awarded the Victoria Cross. These men could count on at least promotion by brevet, and in three cases (Lieutenants Bromhead, Chard and Roberts) the normal rules were broken to the extent that they were given the immediate step in regimental rank which would then enable them to be promoted to Major. Even in the cases where they were not promoted immediately, (Lieutenants Gerald Graham and Wilbraham Lennox), they were given opportunities to display distinguishing qualities which would lead to their rapidly receiving three steps by brevet, so that each was a full Colonel by the age of thirty-seven, and while still a Captain in the Royal Engineers.⁵³ Of the base group of one hundred and twenty-five, sixty-nine were promoted to Lieutenant-Colonel by brevet, and of these forty had already gained a majority the same way.

⁵³ An example of Graham's contribution to the study of continental developments can be seen in his translation of *The Operations of the German Engineers and Technical Troops, during the Franco-German War of 1870-71* from the German of Captain Adolphe Goetze in 1875. Further references to Graham's and Lennox's influence in encouraging the study of continental developments will appear in later chapters.

But gallantry was not the only path to brevet rank and rapid promotion.⁵⁴ Intellectual powers and administrative skills also had their place. However, there remains an impression, reinforced by quoting, often out of context, the ‘Blimpish’ observations of crusty senior officers, that the Victorian military establishment was stubbornly hostile to cleverness in its officers.⁵⁵ For example, Alfred Cochrane, writing the DNB entry for George Sydenham Clarke (Lord Sydenham) in the 1930s, said that, though he passed first out of Woolwich in 1868, ‘ Clarke saw little active service, and his promotion was slow, for the military authorities of those days had little regard for scientific young officers with progressive views’. Yet the record shows that his talents in the fields of military fortification and defence organisation were fully exploited by the establishment in a career of vast achievement. He reached Lieutenant-Colonel’s rank in the engineers after twenty-five years’ service (and this was a normal rate of promotion) but he had already achieved national recognition as Secretary of the Colonial Defence Committee and Secretary of the Royal Commission on navy and army administration while still a Major.⁵⁶

Promotion within the regiment *was* important, but for truly ambitious officers it commonly lost much of its appeal once they had attracted the notice of the establishment, and had seen the possibilities for fulfilling those ambitions outside so limited an environment. Four examples, two each from the Royal Engineers and the Royal Artillery, will make this clear. It was noted earlier that Robert Murdoch Smith and Charles Wilson were placed first and second in the open competition for direct entry in 1855. Each subsequently spent very little time in regimental soldiering, because their talents were

⁵⁴ Nor was it sufficient on its own, as the subsequent career of Lieutenant Bromhead shows. Bromhead’s military connections were impeccable; his grandfather, the first Baronet, was a Lieut.-General, his father served in the Waterloo campaign, and all three of his brothers were soldiers. The eldest died young, but both the others were Colonels. By comparison his own career was undistinguished; he died of enteric fever while still serving as a Major in India, aged forty-five. His niece Janetta married William Birdwood, later the Field Marshal, whose family was already connected to Bromhead’s by marriage. (Details provided by the curator of the South Wales Borderers Museum.)

⁵⁵ See St Aubyn, 117, for an example, taken from *Stray Recollections*, by Sir C Callwell (London, Arnold, 1923), of the repetition of an elephantine attempt at humour on this subject by Cambridge.

⁵⁶ As a comparison, General Sir Wilbraham Lennox, with all the advantages of aristocratic birth, the VC and two brevets before he was thirty, was only promoted regimental Lt.-Colonel at the age of forty-three, after almost twenty six years’ service, and six years after his brevet promotion to Colonel.

exploited in different directions. Smith, who had no background of privilege or access to powerful patronage (his father was a GP and his education was at Kilmarnock Academy and Glasgow University) was encouraged to pursue his interests in archeology and surveying in Asia Minor and Cyrenaica; then, after a short period of service as a specialist in fortification at the War Office, he was employed for twenty years installing and maintaining the vital strategic telegraph link across Persia, until he retired as Major-General with a KCMG.

Wilson (educated at Liverpool College and Cheltenham) was employed as Secretary of the Commission surveying and delimiting the border between British Colombia and the USA when he was twenty-one. After a short time working on improving the defences of the Thames estuary and the Medway he was sent to survey Palestine on behalf of the Ordnance Survey, and this aspect of military duty dominated the rest of his professional life. He had short periods of duty as military Consul General in Anatolia in 1879, working with the military attaché to the British Agency in Egypt in 1882 and as Wolseley's chief of intelligence in the Sudan in 1884, but his topographical skills were never long neglected. He ran the Ordnance Survey in both Scotland and Ireland while a relatively junior officer, was the first Director of the Topographical Department at the War Office in 1870 (appointed while still a captain) and finally retired after serving as Director General of Military Education from 1892 to 1898, with a KCB to add to his KCMG.

John Henry Lefroy (father Rector of Ashe in Hampshire, educated at private schools) was commissioned from Woolwich into the artillery in 1834. While stationed at Chatham four years later, he joined with his fellow Lieutenant Eardley Wilmot to propose the establishment of the Royal Artillery Institute, and became its first Secretary. This initiative did not go unnoticed. Within a year he and Eardley Wilmot were sent on a mission to the Antarctic to establish 'magnetical observatories', and as soon as this task had been successfully completed Lefroy was despatched to Canada, where he undertook a long expedition to the Arctic to survey the effect of the world's magnetic disturbances. During his nine years in Canada he founded, and became the first President of, the

Canadian Institute, and was made a Fellow of the Royal Society. This was important work, and it was not peripheral to his service career. In 1853 he returned home to rejoin his Battery, and resumed his Secretaryship of the RAI. Within a year he had written the 'Handbook of Field Artillery for Officers in the Field', which remained an official textbook till 1884, and had been called into the War Office as Newcastle's 'scientific adviser on subjects of artillery and inventions'. He was then given the task of reorganising the Ordnance Select Committee to make it more effective — all this, it must be noted, while he was still a Captain.

Thereafter his influence was felt in other crucial aspects of the army's development. Panmure, Newcastle's successor, sent him to the Crimea to investigate the treatment of the sick; he was deeply involved in the reform of the army's educational provision, particularly in the conversion of the Senior Department of the Royal Military College into the Staff College in 1857, and as Inspector General of Army Schools; he served on the Royal Commission on the defence of the United Kingdom of 1859; and he ended his military career as Director General of Ordnance. There was little regimental duty in this distinguished career, but he reached the rank of Lieutenant-Colonel after twenty years and nine months (his only brevet taking him to the rank of Colonel three years later), and when he retired from the army, as a Major-General, he continued his public service as Governor of Bermuda and Tasmania.

The second example from the artillery is of a soldier who followed a more orthodox army career than Lefroy, Smith and Wilson — James Grierson. The eldest son of a Glasgow merchant, he joined Woolwich from Glasgow Academy in March 1876 as a seventeen year-old. He passed out in April 1878, fourth in order of merit and with prizes in military history and Italian, and chose to serve in the artillery.⁵⁷ His potential had already been noted by his superiors, since his translation, *from the Russian*, of General Todleben's account of the siege of Plevna in the pages of the Proceedings of the Royal

⁵⁷ 'His commission was announced in the *London Gazette* of 24th May, ante-dated six months — needless to say without pay — as was the custom in those days and consequently bearing date 9th October, 1877.' Macdiarmid, DS, *The Life of Lieut. General Sir James Moncrieff Grierson* (London, Constable, 1923), 21.

Artillery Institution had been written while he was still a cadet, and this must have been with the blessing, if not the active encouragement, of his mentors.⁵⁸ Within a year he was able to embark on a series of visits to the Austrian and Russian armies, and when his Battery was transferred to India he very quickly found himself posted to the General Staff as attaché in the Quartermaster General's Department, Intelligence Branch, '.... the very work I should most of all like'.⁵⁹ When his Division was sent as part of the Indian component of Wolseley's army for the Egyptian campaign of 1882 he was appointed DAQMG (Intelligence), where he served with great credit, and it must be emphasised that he was then a twenty-three year old subaltern.

Thereafter his progress was rapid, and carefully managed to include experience of Staff and Intelligence work interspersed with regimental soldiering at every level, which involved exposing him to intimate contact with the armed forces of the country's likeliest rivals, until his final appointment to command II Corps of the BEF in 1914. Some evidently carefully chosen words of his friend and rival Earl Haig describing this progression are significant. 'Grierson was looked upon by a large number of his fellow-countrymen as the British soldier best fitted by natural ability and deliberate training to meet the German military leaders on equal terms.'⁶⁰ Much has been made, quite rightly, of the value to the Prussian/German army of the time of the care with which the capabilities of their ablest officers were nurtured. Grierson's career stands as evidence that similar care was not unknown in the Victorian army.

What these examples also show is that the rapidity with which a young officer moved through the ranks in his early career was not always of great significance, provided that he had talents which were regarded as valuable outside the immediate confines of regimental duty. This was particularly true of officers who showed an aptitude for teaching. Early years spent instructing at Sandhurst, Woolwich or the Staff College would limit a young officer's opportunities to display the sort of outstanding qualities in the field which might lead to brevet rank or decoration for gallantry, but there

⁵⁸ Proc RAI, vol. 10, 1877, 369-78.

⁵⁹ Macdiarmid, 31.

were significant compensations.⁶¹ For a start, these teaching posts carried with them a salary of four or five hundred pounds a year, with decent living accommodation and allowances. Sometimes the officer in question could remain on his unit's establishment and continue to draw his full army pay as well; at worst, he would be entitled to half-pay to supplement his salary, and this would enable him to maintain a very respectable standard of living.

There was also of course every opportunity to study, to contribute to the development of his profession by writing as well as lecturing, and to keep in touch with what was happening at the centre through attending meetings at such institutions as RUSI. The career of Major-General Sir Frederick Maurice is a good illustration of the value of such a career to a thoughtful officer. He was commissioned in the Royal Artillery in 1862, had an early opportunity to study at the Staff College, and became an instructor in tactics at Sandhurst in 1872. He was still at that time a subaltern (aged thirty-one) when he drew himself forcefully to the notice of the establishment by beating a strong field, which crucially included that rising star Colonel Wolseley, to win the first Wellington Essay Prize.⁶² His essay was immediately recognised to be an authoritative analysis of how the army should respond to developments in the armies of the major European Powers, and his reputation was established. His subsequent career, partly at the War Office, then for many years in the field under the aegis of Wolseley, led to a valuable career as both a teacher, including seven years as Professor of Military Art and History at the Staff College, and as a front-line soldier, commanding artillery brigades at Aldershot, the Eastern District and Woolwich, while he continued to contribute powerfully to the debates about the structure and doctrine of the army.

Maurice was only one of a small, but as it turned out influential, group of officers whose reputations were enhanced by the contributions, both in teaching and in writing,

⁶⁰ Ibid, v.

⁶¹ Sir Edward Bruce Hamley was the exception, in that he was lucky enough to participate in major campaigns as a junior officer, and (similarly to Gerald Graham and Wilbraham Lennox) was raised by three brevets to full Colonel before he was forty.

⁶² Published as Maurice, Lieutenant F, RA, *The System of Field Manoeuvres Best Adapted for Enabling our Troops to Meet a Continental Army*, (Edinburgh, Blackwood, 1872).

which they were able to make to the way that the army addressed the problems of coming to terms with the realities of modern warfare. The list includes Sir EB Hamley, Charles Chesney, Charles and Henry Brackenbury and Lonsdale Hale. Their contribution was continued by the efforts of the generation which followed, exemplified by the attention paid to Maurice's successor as Professor at the Staff College, Colonel GFR Henderson, but the main concern of this study is with the influential soldiers of the 1860s and 70s. The impact of their teaching (at the Staff College in particular) must not be overlooked, but it will be with the influence which they wielded through their writings, through their submissions to Commissions and Committees, through their participation in the great debates at RUSI and elsewhere, and through the power which they were able to wield from time to time when they found themselves in positions of responsibility that this thesis will be most concerned.

Some recent scholars have cautioned against over-estimating the influence of the more pedagogic of this group. The value of the contributions of Hamley and Lonsdale Hale has been specifically questioned, but, whether or not their approach appeals to scholars today, the evidence that their own contemporaries took them seriously is strong.

Lonsdale Hale (1834-1914) was commissioned in the Royal Engineers in 1853. He became an instructor in military history, at Chatham, and then a professor at Camberley,⁶³ reaching the rank of Colonel and eventually achieving a knighthood. He does not merit a mention in the *Dictionary of National Biography*, and the note in *Who was Who* is curt, which suggests that he may not have been a popular man. Dr Howard Bailes is inclined to dismiss his work, describing one of Hale's *Tactical Studies* as '.... a factual compilation of extraordinary aridity, unenlivened by any flashes of wit, or attempts to point the most obvious morals of the engagements', and he concludes that '.... one looks in vain for any sign of his influence outside the arena of theoretical debate'.⁶⁴ This is a harsh judgment, and there is some evidence to suggest that it underestimates Hale's influence in

⁶³ Bond, *Victorian Army*, 248.

⁶⁴ Bailes, Howard, 'The influence of continental examples and colonial warfare upon the reform of the late Victorian army', unpublished PhD thesis (London, 1980), 13. This detailed and comprehensive work is a mine of information about the period.

professional circles. One of Garnet Wolseley's letters, written to the Duke of Connaught in 1889, weighing up what the British army should learn from the Germans and what it should not, includes this passage;

.... I have just been very carefully over all the battle fields of the Franco-German war. We were a party of seven Generals on the active list, two Colonels, two Majors and one Subaltern. With map in hand and the German official account to read from and Colonel Lonsdale Hale to lecture us upon every phase of every action, no men I am sure ever went into minutiae more carefully than we did.⁶⁵

The hint of weariness is palpable, but the fact is that a busy Adjutant-General considered it worthwhile to study the achievements of the German army on the ground, with colleagues, and under the tutelage of Lonsdale Hale.

Hale *was* a pedant, but his contributions to the pages of *Macmillan's* and the *Proceedings of the Royal Artillery Institution* were very much in the spirit of the time, in seeking to apply valuable principles from German military practice for the benefit of the British army; and, to a twenty-first century reader's eyes, they seem no drier than most of the rest.⁶⁶ Furthermore, there were times when his painstaking attention to detail enabled him to put the significance of events into a new perspective and correct a prevailing misconception. The incidence of casualties caused by artillery fire during the 1870-71 campaign is a case in point.

A general lesson drawn from the Franco-German War, said Hale, had been that only five per cent of casualties were caused by artillery and *mitrailleuse* fire, and nearly ninety-five per cent by rifle fire, and he cites Robert Home and Garnet Wolseley as having drawn conclusions from those figures. Wolseley, indeed, was using them to contradict the arguments of those who were drawing attention to the increasing importance of artillery.⁶⁷ What Hale does is to point out that the statistics being quoted reflected German casualties from French guns. When he investigated French casualties

⁶⁵ Wolseley to HRH the Duke of Connaught, KG, C-in-C Bombay, 30 September 1889. Wolseley papers, Hove, PLB 103.

⁶⁶ *Macmillan's*, vol.38, May 1878, 48-57, and July 1878, 221-32, and *Proc RAI*, vol.16, Oct. 1888, 449-64.

⁶⁷ 'This alleged increased importance of artillery is a myth.' Wolseley, 'Our autumn manoeuvres', *Blackwood's*, vol.112, August 1872, 630.

from German guns, he found that twenty-five per cent were caused by artillery fire, which puts a very different complexion on the lessons to be learned.⁶⁸

Bailes is almost equally dismissive of Hamley; ‘Professor Jay Luvaas has said all that is needed on Hamley in *The Education of an Army* (London, 1965), 130-68’.⁶⁹ Luvaas, in the chapter which he devotes to Hamley, does indeed take him to task for the formalism of his *Operations of War*, and he is understandably indignant about Hamley’s slowness in appreciating the lessons to be learnt from the American Civil War, but he acknowledges that Hamley could change his views over time. Like Bailes, he takes no account of the contribution which Hamley made to the general debate in the periodicals. There does seem to be a disposition among students of this period to denigrate Hamley, who was after all a teacher, for having written a textbook. ‘As original as most textbooks’, says Luvaas drily,⁷⁰ and AW Preston develops the theme;

The Operations of War ought not to be considered a classic on war. It contained no original theory. As the single work on strategy in an age worried about tactics, it received an altogether unmerited acclamation; and its effect on British military thinking was considerable.⁷¹

At least this is an acknowledgment that Hamley, however limited in his thinking, did wield considerable influence. He always wrote well, and in the opinion of the present writer his analyses of why the French war machine was a potent threat in 1864, and why the Prussians were so uniformly successful in 1870-1, stand comparison with the best in persuasive power as well as elegance.⁷²

It is perhaps possible to sum up this section, about how young officers established a reputation, and what impact those who thought about the larger issues could wield, by taking the cases of two sets of brothers, the Chesneys and the Brackenburys, all of whom played a substantial part in the response of the army to continental developments and the

⁶⁸ Hale, L, ‘The spirit of tactical operations of today’, lecture at Aldershot, printed in *Proc RAI*, vol.16, Oct. 1888, 455.

⁶⁹ Bailes, thesis, note 27, 19

⁷⁰ Luvaas, *Education*, 140.

⁷¹ Preston, AW, ‘British military thought’, 59.

⁷² Hamley, EB, ‘Louis Napoleon as a general’, *Blackwood’s*, vol. 45, March 1864, and *Operations of War*, 7th ed. (Edinburgh, Blackwood’s, 1914), 347.

need for reform. George Chesney, like Hamley, had the chance to see plenty of action as a young officer, and rapidly reached a position of influence through achieving high rank after three brevet promotions. Charles, not fitted by health for so active a career, gained no early preferment by brevet, but his intellectual accomplishments (he passed first of his term out of Woolwich) led to his appointment as Professor of Military History at Sandhurst at the age of thirty. He subsequently held the same position at the Staff College, and his biographer in the DNB records that, in addition to revolutionising teaching methods there, he came to be accepted as the foremost military writer of his day. These talents did not go unrecognised. He was appointed a member of the Northbrook Commission on Military Education of 1868-70, was sent officially to report on the Franco-German War and was closely involved with Cardwell's structural reforms. His promotion to brevet Colonel in 1873 was perhaps a rather belated acknowledgment of his contribution, but it was directly related to his appointment to command the engineers of the Home District, in which post he died at the early age of forty-nine.

Henry Brackenbury, one of the able batch of schoolboys selected for accelerated commissioning in the artillery during the Crimean War,⁷³ had earned a reputation for 'remarkable ability' and was Professor of Military History at Woolwich by the time that Wolseley selected him as his military secretary for the Ashanti campaign in 1873.⁷⁴ As a favoured member of the Wolseley 'ring', he saw service in Cyprus, Zululand and the Sudan, as well as brief spells doing humanitarian work in France during the Franco-German War, as private secretary to the Viceroy of India, military attaché in Paris and (unhappily) as under-secretary for crime in Ireland, before his key appointment as head of the Intelligence Department between 1886 and 1891. This was followed by five years as military member of the Viceroy's Council, three as President of the Ordnance Committee, and finally in the crucial post of Director General of Ordnance throughout the 2nd Boer War.

⁷³ See page 38, footnote 47 and appendix A1.

⁷⁴ Wolseley, *The Story*, vol.2, 280. Curiously, Wolseley says that Brackenbury was a stranger at the time, though he recorded that Brackenbury, like himself, was one of the officers who worked closely with

His older brother Charles served in the Crimea as a Lieutenant in the artillery without furthering his prospects by brevet promotion. He did secure a position as Assistant Instructor of Artillery Studies at Woolwich in 1860, but did not gain promotion to the rank of Major until 1872, when he was forty and had served for twenty-one years. However, his intellectual qualities had been noted, and he was brought into the Intelligence Branch of the War Office two years later. Promotion to Lieutenant-Colonel soon followed, at the age of forty-four and after twenty-five years' service, and he was now in a position to wield some influence, partly through his writings and partly through the series of responsible posts to which he succeeded; Superintending Officer of Garrison Instruction at Aldershot, Superintendent of the Gunpowder factory at Waltham Abbey, Director of Artillery Studies at Woolwich, and finally Director of the Artillery College (and a Major-General).

What the careers of these officers demonstrate is that there was more than one way to achieve a distinguished career in the service. Patronage and family connections undoubtedly played their part. The interest of a powerful patron was often instrumental in launching a young man's military career,⁷⁵ but once in the regimental system his progress was governed by seniority, modified by the power of the purse if he was in a branch of the service where purchase was possible. However, when a campaign at any distance from the shores of Britain was in contemplation, there was some scope for a local commander to encourage the development of young officers who had caught his eye, by ensuring that the posts in his personal 'family', and to a large extent his General Staff, were his own choice. This was how rising stars like Wolseley and Roberts were able to collect round them the groups of able protégés who came to be known as their 'Rings'. The friendship, coherence in approach to military affairs and continued patronage of their chief which such cliques enjoyed considerably strengthened the impact of their views on the establishment as they progressed up the ladder of seniority, despite the jealousies

Cardwell. Ibid, 255. Equally strangely, he does *not* mention Charles Chesney in the list of those who worked with Cardwell.

⁷⁵ Wolseley's sponsorship by Wellington (Kochanski, *Sir Garnet Wolseley*, 3) and the support which the Earl of Derby gave his illegitimate nephew Burgoyne (DNB) are cases in point.

which their favoured status (and the animosities between one clique and another) generated.

This undoubtedly eased the paths of men like Henry Brackenbury and Frederick Maurice, but it must not be overlooked that it had been their own talents which had brought them to the attention of their patrons in the first place. Some instances from Brackenbury's early career, when he was still a Captain, illustrate this. While he was in France during the war of 1870-71 he made the acquaintance of the Duke of Cambridge's oldest son George. When this undistinguished soldier wrote a little monograph called *Plan of the Battle of Sedan* in 1871 he sent Brackenbury two copies, accompanied by a fulsome letter of thanks for Brackenbury's 'kindness at Metz'.⁷⁶ More significantly, in 1872 he was called upon to deliver a series of instructive lectures to the Duke of Connaught (also a Captain, but aged twenty one as against Brackenbury's thirty four), noted with favour by the Queen, and the following year he gave the crucial lecture at RUSI '.... on the changes which the Franco-German War had shown to be needed in the tactics of our army'.⁷⁷

Family connections certainly helped to create and disseminate a common attitude, and appendix A3 takes the immediate circle of General Sir Robert Biddulph as an illustration of how wide the tentacles of such relationships could be. Another powerful example would be the Royal Family. The Duke of Cambridge's connections were touched on earlier in this chapter. His cousin the Duke of Connaught, a dedicated soldier, benefited from his association with the best minds in the army, such as Wolseley and Brackenbury, throughout his career, but he also had the advantage of close relationship with two of the most professional officers in the Prussian army, his father-in-law Prince Friedrich Carl and his brother-in-law the Prussian Crown Prince.

⁷⁶ The text of this letter, which the present writer came across inside the cover of a copy of the monograph, is reproduced in appendix B2.

⁷⁷ Brackenbury, Henry, *Some Memories of My Spare Time* (Edinburgh, Blackwood, 1909), 216-7, 219-22.

Such international connections were not the prerogative of princes only. Four of the commoners in the base group were educated abroad, and significant numbers spent much of their leisure time travelling on the continent, often to visit relations. Even General Ainslie, archetype of the ‘unprofessional’ and reactionary soldier, seized every opportunity to exploit his connections to see how European armies conducted themselves,⁷⁸ while the young Kitchener was very gently rebuked by Cambridge for taking time out to serve in the French army in 1870.⁷⁹

It is difficult to assess the impact of such connections, but Grierson, for example, has left on record the importance of the influence of his continental travels on his future career.⁸⁰ It is easier to evaluate the contribution of those officers whose experience of foreign armies arose more directly from their employment.

Officers on detached duty. Some parts of the army, notably the Royal Artillery and the Royal Engineers, regularly sent small groups of promising officers to visit their opposite numbers in foreign armies, and report on what they had learned.⁸¹ What is surprising is the extent to which such missions were welcomed, and how much valuable information they were readily given. When campaigns were in progress, the level of such activity was naturally raised. RA Preston and Jay Luvaas have recorded in interesting detail the swarm of British officers who were sent to the United States during the Civil War, and the extent to which they were made free of American techniques and thinking at a time when it was quite possible that Britain and the Federal Government would find themselves at war.⁸²

These two authors also looked in detail at the large number of British officers who took the opportunity to see the Civil War at first hand, by making private visits while on

⁷⁸ See page 242.

⁷⁹ DNB.

⁸⁰ Macdiarmid, 9-18.

⁸¹ See, for example, ‘Report of a professional tour of Officers of the Royal Artillery in 1868’, PRO WO33/21a, ‘Report to the Adjutant General to the Forces, 8 October 1869 by General WJ Codrington’, ‘Report by JH Ker Innes, DIG of Hospitals, on the medico-military organization of Prussia....’, and ‘Reports from Lieutenant-Colonel Chesney, RE, and Major Stotherd, RE, commencing 21 June 1871’, all in PRO WO 33/24.

⁸² Preston, RA, ‘Military Lessons of the American Civil War’, *Army Quarterly*, vol. 65, Jan. 1953, 229-37. Luvaas, Jay, *The Education of an Army: British Military Thought, 1815-1940*, (London, Cassell, 1965).

leave. Garnet Wolseley was the most prominent of these men, but there were many others, usually from the garrison in the Canadian provinces, and it would be interesting to learn more about the extent to which their unofficial wanderings had been actively encouraged by higher command. There is little evidence that what they learned found its way into the official records, but in the long run the influence of what they saw is easily discernible in the subsequent writings and arguments of men like MacDougall, Denison and Wolseley himself; and the last named, at least, began to put his ideas into the public domain immediately.⁸³

Military writers. The continental wars were more accessible, and British officers sought for opportunities, official or unofficial, to get to the seat of the action whenever war broke out. In many cases they had been retained by newspapers, but, whether or not this was the case, their analysis of what they had seen usually appeared reasonably promptly in the pages of the periodicals, and later chapters of this work will include many extracts. Meanwhile, mention should be made of two books by British officers on the Austro-Prussian War. HM Hozier's '*The Seven Weeks' War*' and WJ Wyatt's '*A Political and Military Review of the Austro-Italian War of 1866*' made their appearance while the campaigns were still very much in the forefront of military thinking.⁸⁴

The 1866 war produced two serious works of military analysis from a serving Prussian officer, which quickly appeared in England in Colonel Ouvry's translation, as *The Campaign of 1866: A Tactical Retrospect* and *On the Prussian Infantry 1869*. They were published anonymously, and initially there was speculation that they might be the work of one of the senior Prussian generals, but it was soon established that the author was Hauptmann May, a company commander in the 44th (East Prussian) Infantry Regiment.⁸⁵ Ouvry also translated the riposte which May's writings had provoked from

⁸³ Wolseley, Garnet J, 'A month's visit to the Confederate headquarters', *Blackwood's*, vol.43, Jan., 1863, 1-29.

⁸⁴ Hozier, HM, *The Seven Weeks' War*, (London, Macmillan, 1867). 2nd ed. 1907.

Wyatt, WJ, *A Political and Military Review of the Austro-Italian War of 1866*, (London, Stanford, 1867).

⁸⁵ Theodor Robert May, born in Kassel, 27 June 1836, killed in action at Amiens, 27 November 1870. He had attended the *Kriegsakademie* and been attached to the *Grosser Generalstab*, and was described in his regimental history as '.... the unforgettable Capt. May, model of a dedicated and outstandingly brave Prussian officer, and one destined for a glittering military career' ('.... im Regiment unvergessliche Hptm.

Colonel Bronsart von Schellendorf, on behalf of the Prussian General Staff. The significance of these works will be discussed in the section on tactics in chapter five.

The Franco-German War generated a prodigious amount of analytical writing. Comparatively little appeared in book form from the pens of British soldiers, but there was a flood of serious articles in the magazines and journals, and much of the material in later chapters illustrating contemporary British thinking will be drawn from this source.

The books which were designed to stimulate thinking were, on the whole, another batch of translations by British officers of books by foreign, usually German, soldiers. The first of these works was actually the official German account of the previous war, *The Campaign of 1866 in Germany*, translated by Captain H Hozier in collaboration with Colonel von Wright (chief of staff of the VIIIth Prussian corps), and published in 1872 under the aegis of the Topographical and Statistical Department of the War Office. The monumental official German record of *The Franco-German War of 1870-71* (translated by Captain FCH Clarke, RA, and issued by the new Intelligence Branch of the War Office) began to appear in 1876, and, if it achieved nothing else, the detailed study of its pages gave Colonel Lonsdale Hale the inspiration for his life's work.

A work which made a greater impact on British thinking appeared in 1874. This was Albrecht von Boguslawski's *Tactical Deductions from the War of 1870-71*, translated by Colonel Lumley Graham and published in London by HS King. This book was reissued in America in 1996, by the Absinthe Press, after being out of print for many years (reproducing the second edition of Graham's translation), but it is disappointing to find that his preface, which ran to twenty-two pages of analysis of the main points in the text, has been omitted.

May, das Muster eines preussischen pflichttreuen und hervorragend tapferen Offiziers, dem noch eine glänzende militärische Zukunft winkte. '). Hoffmann, Traugott und Ernst Hahn, Geschichte des Infanterie-Regiments Graf Dönhoff (7. Ostpreussischen) Nr. 44 1860-1918 (Berlin, Verlag Tradition Wilhelm Rolf, 1930), 30, 413.

Another work of great importance in directing British thinking to the military revolution taking place in Europe was the appearance in translation of the reports of Baron Eugene Stoffel. This perceptive officer was the imperial French military attaché in Berlin in the years leading up to the Franco-German War, and he sent regular reports to his masters in Paris, trying to alert them to the realities of the Prussian military developments and warning them of the threat to France. There is some doubt about how much attention his reports commanded in Paris,⁸⁶ but they were swiftly made available to the British army, and Lieutenant CEH Vincent was able to translate them for publication in *Fraser's Magazine* in November and December 1871.⁸⁷ Vincent's short introduction contains some hard hitting material, considering that he was a twenty-two year old subaltern at the time, and this reinforces the view that bright young officers, far from being squashed if they dared to open their mouths, were sometimes encouraged to speak their minds.

The wars in the Balkans in the late 1870s generated a literature of their own. Initially at least the British public were given the views of foreign professionals again. First, the Russian general Todleben's reports on the siege of Plevna appeared in full translation in the proceedings of both the Royal Artillery Institution and the Royal Engineers, the translators being Lieutenant JM Grierson, RA, and Captain GT Plunkett, RE.⁸⁸ One other foreign soldier's narrative of this war, published originally in New York in 1879, was produced in a British edition by WH Allen in 1880. This was the account by Lieutenant FV Greene, US Army, of *The Russian Army and its Campaigns in Turkey, 1877-78*. This work, published by order of the American Secretary of War, was of sufficient literary and analytical merit to attract immediate attention on both sides of the Atlantic, and is still used as a textbook in the training of American officers.⁸⁹

⁸⁶ Bond, *Victorian Army*, ch.1, 36. Craig, Gordon, *The Politics of the Prussian Army* (Oxford, OUP, 1972), 259-60.

Brackenbury, CB, 'The intelligence duties of the staff abroad and at home', *JRUSI*, vol.19, 1876, 258.

⁸⁷ Vincent, CEH, 'Reports on the military forces of Prussia and the North German Confederation, 1868-70' *Fraser's*, Nov. 1871, 537-62 and Dec. 1871, 671-94. Subsequently published in book form by Longmans.

⁸⁸ *Proc RAI*, vol. 10, 1877, and *PPRE*, vol. 2, 1878.

⁸⁹ The present writer is indebted to Dr. Robert Foley, late of the United States Marine Corps, for this fact.

One question which this study must address is how much influence these works had on British military thinking at the time. The detailed aspects are discussed in later chapters before an answer is hazarded, but the fact that such works were made available to British readers quickly and with apparent official support does suggest that there was a positive concern to find out what lessons might be learnt. There is direct evidence of this. In April and May 1878 Colonel Edward Clive, Grenadier Guards (a future Commandant of the Staff College), delivered two important lectures at the Royal United Service Institution. The subject was ‘On the influence of breech-loading arms on tactics, and the supply of ammunition in the field’.⁹⁰ The audience was formidable; Wolseley was in the chair, and contributors to the discussion which followed the second lecture included General Sir William Codrington, Lieut.-General Beauchamp Walker, Colonel Sir Lumley Graham, Lieut.-Colonel CB Brackenbury, Lieut.-Colonel Lonsdale Hale and Mr. CB Norman.

The vigour of the discussion is significant in itself, because it shows that influential soldiers were anxious to debate the lessons of the continental wars, even if they could not readily agree on how these should be applied to the variety of problems which perennially confronted the British army. Clive made the point himself by declaring roundly:

Many of the works that I refer to, such as those of von Scherf, von Boguslawski, von Verdy du Vernois, and of the late Captain May, have been translated into English, and are not only largely read throughout the Army, but are largely quoted by distinguished officers; and even form text-books at our military schools, colleges, and academies, and the arguments and views advocated in those works are now used in the daily newspapers.⁹¹

Military attachés. In 1865 a new category of British soldier appeared. This was the military attaché, whose *raison d'être* was specifically to provide the government with intelligence about foreign armies, and to foresee potential military threats. Verner, in his biography of the Duke of Cambridge, gives the Commander-in-Chief the full credit for

⁹⁰ Clive, Colonel E, ‘On the influence of breech-loading arms on tactics, and the supply of ammunition in the field’, *JRUSI*, vol.22, part 1, 12 April 1878 and part 2, 10 May 1878.

this innovation, citing a letter from HRH to Lord de Grey on 8 March 1864, in which he presses for such posts. Verner claims that the first appointments followed on 13 April 1864 (sic); so '(i)t is interesting to know that HRH's efforts on this occasion were not without avail'.⁹² However, Verner seems to have got the year wrong here, since the Foreign Office List says that the appointments of Walker to Berlin and Foley to Vienna were gazetted on 26 April 1865. Verner's comment is the more puzzling in that he was perfectly well aware, as the preceding pages of the biography make clear, that the subject had been under serious consideration for three years or more.⁹³

The Prussians are credited with having invented the rôle of military attaché in the aftermath of the Jena campaign. Their subsequent history has been described in Gordon Craig's long article, 'Military diplomats in the Prussian and German service: the Attachés, 1816-1914' in the *American Political Science Quarterly* (vol.64, 1949) and in Lothar Hilbert's unpublished thesis, 'The role of military and naval attachés in the British and German service....' (Cambridge PhD, 1954).

Governments had long been in the habit of sending special representatives, often called commissioners, to observe particular activities. Colonel Claremont, who was one of the first batch of British officers to be given the official title of military attaché, had in fact been appointed military commissioner in Paris as long before that as September 1855. He had accompanied the French armies in the Crimea, and in Italy in 1859 (having been redesignated Attaché on Special Service at Paris in October 1858), so his new title did not betoken any obvious change in duties. Similarly, Brigadier-General Rose had been the Queen's Commissioner at the headquarters of the French Army of the East in 1854, and Major the Hon. St. George Foley was first his ADC, and subsequently Assistant Commissioner and then Commissioner in China in 1860.⁹⁴

⁹¹ Ibid, 815.

⁹² Verner, Colonel W, *The Military Life of HRH George, Duke of Cambridge*, 2 vols. (London, Murray, 1905), vol. I, 362.

⁹³ See reference to memo. to Sir George Lewis, 20 Oct. 1862, below.

⁹⁴ Foreign Office List, 1880.

These appointments had been made on an *ad hoc* basis, and there had been increasing pressure to put the collection of military intelligence onto a more business-like footing, culminating in the establishment of a Select Committee ‘to enquire into the constitution and efficiency of the present diplomatic service’, including this issue.⁹⁵ One piece of evidence which they considered was a report from Colonel Cadogan in Turin, dated 13 May 1860, recommending ‘....a system based on the employment of military officers permanently attached to our different embassies and legations’,⁹⁶ and this was taken up by the committee when they reported on 23 July 1861. Recommendation 15 read ‘that military personages should be attached to the chief missions, in the manner recommended in the report of Colonel Cadogan’.

Two points of interest arise from this document. The first is that the title of military attaché was already in use; appendix 4, which contained statements taken from ‘Her Majesty’s Diplomatic Servants’, refers to Colonel Claremont, Captain EG Hore, RN, and Major General FW Hamilton as, respectively, military attaché, Paris, naval attaché, Paris, and military attaché, Berlin. But the use of the name is not in itself important. The significance was that henceforth such appointments were to be made on a routine basis, not as a response to some special circumstance.

The second point was of more serious consequence. Cadogan had recommended ‘(t)hat the correspondence between these military missions and Government be carried on as hitherto, through Her Majesty’s Principal Secretary of State for Foreign Affairs, but with a direct communication under flying seal with the War Office also’. This was intended, as he said, to preserve direct communication between the War Office and the officers in question, but it turned out to be a contentious issue. The Foreign Office were anxious to ensure that their management of the country’s relationships with other powers should not be circumvented, and insisted that all reports from military attachés should be made, in the first instance, to their head of mission. Unfortunately for the War Office, the Commander-in-Chief had inadvertently given the diplomats the means of ensuring that

⁹⁵ Report of 23 July 1861, Parliamentary Papers.

⁹⁶ Ibid. Appendix 9.

they would get their way. In a memorandum to Sir George Lewis on 20 October 1862, referring to the need for a military attaché in Berlin, he had said that it was vital that ‘...the expense of this post must not be thrown on the War Department . It is a political and not a mere military appointment, according to my view of the case....’. (This memorandum is quoted by Verner, which must raise the question of why he claimed that the 1864 letter was what triggered the development.⁹⁷) Accordingly, until 1872 the salaries of the military attachés were met from the Diplomatic fund, and he who pays the piper calls the tune. In the end, Major Brackenbury’s report of November 1874, on the departments of foreign staffs corresponding with the Intelligence Branch of the Quartermaster General’s department, put forward the sensible compromise that, while the principle of Foreign Office routing was incontestable, in the end the right course of action must be for the military attaché to use his own tact and judgement.⁹⁸

Appendix B1 shows the names of the principal military attachés during this period. Their ability to perform their function seems to have varied with time. During the 1860s there was a general openness in the sharing of military information. What Stoffel was able to report to his government has already been described, and the British attachés were similarly able to travel where they would and discuss details of armaments and organisation with local commanders.⁹⁹ This freedom of access was sharply curtailed in 1870 (though Brackenbury had noticed signs of a change in attitude three years earlier).¹⁰⁰ When hostilities broke out both the French and Prussian governments declared that no foreigners of any kind were to be allowed to accompany the armies.¹⁰¹ In the event, these rules were relaxed a little. Favoured officers such as Colonel Walker were welcomed at army headquarters on the German side, and others found their way to the action on both sides, some as correspondents for the papers, others in a variety of semi-official positions. It must also be noted that military attachés at the chief European

⁹⁷ Verner, vol.I, 361.

⁹⁸ PRO WO33/28, 1876, and PRO WO 147/23.

⁹⁹ See, for example, Colonel Walker’s memo. on ‘Prussian Army transport arrangements’, PRO WO33/17a, 1866 and Colonel Crealock’s ‘Report on the new Austrian military train’, PRO WO33/19, 1868.

¹⁰⁰ Brackenbury, Henry, ‘The military armaments of the five Great Powers’, *St. Paul’s*, vol 1, 1867, 183.

¹⁰¹ Enclosure with letter from Lord Lyons in Paris to Earl Granville, 19 July 1870, and the same from Lord A Loftus in Berlin, 30 July 1870, both in State Papers, vol. 60, 1869-70.

capitals at this time enjoyed a totally different status from that which is normal for their modern counterparts. Then, royal courts in Prussia, Austria, Russia and imperial France were also military headquarters, because of the direct relationship between monarch and army. This made it possible for personal acquaintance between attachés and members of royal families to blossom occasionally into personal friendships.¹⁰²

After the war was over, however, continental sensitivity to the activities of the attachés continued to diminish their effectiveness, particularly in Berlin, and Walker was withdrawn from the German embassy in 1876.¹⁰³ Hilbert points out that by then the British ambassador, Odo Russell, had largely usurped Walker's function as a result of his close relationship with Bismarck.¹⁰⁴

Beauchamp Walker continued to take a keen interest in the organisation of the army. In October 1878 he was writing in *Macmillan's* on 'Compulsory or voluntary service',¹⁰⁵ with many details of German practice, and there are frequent references to his interventions in the debates at RUSI, and no doubt his subsequent employment in the post of Director of Military Education reinforced the respect with which his opinions were received.¹⁰⁶

There were also military attachés in the embassies in London. One of these, the French attaché in London in the early 1870s, has left a fascinating account of the British land forces.¹⁰⁷ This short book is interesting on three counts; its detailed description of the army; its generally admiring tone, particularly when comparing the British service

¹⁰² The friendship between Walker and the Prussian Crown Prince is well attested by Walker's reports, and another example is the relationship which developed between the Austrian Emperor Franz Josef and the young Lieutenant Kitchener. See George, Sir Arthur, *Life of Lord Kitchener*, 3 vols. (London, Macmillan, 1920), vol. 1, 12.

¹⁰³ PRO FO 64/827, 850 and 868. He was replaced in 1878 by Colonel Methuen.

¹⁰⁴ Hilbert, 42, but see 48 for his view that military attachés at 'military' courts sometimes continued to enjoy special favours.

¹⁰⁵ *Macmillan's*, vol. 38, Oct. 1878, 452-8.

¹⁰⁶ See, for example, *JRUSI*, vol. 22, (5 April 1878), 394-6 and (12 April 1878), 841.

¹⁰⁷ Mandat-Grancey, M de, (Capitaine de Cavalerie, Attaché Militaire à Londres), *L'Armée Anglaise avant sa Réorganisation* (Paris, Librairie militaire de J Dumaine, 1873).

with his own; the contrast between its appraisal of the quality of the army and the assessments being made at the time, and since, by domestic critics.

Where ideas were floated. Some soldiers wrote for the papers. . The tradition of publishing soldiers' reports went back at least to the Peninsular War, and since then editors had been in the habit of paying serving officers to write to them from the field. Delane and Dasent were happy to extend this practice to the coverage of the continental wars; Henry Hozier was commissioned to report on the Schleswig-Holstein War of 1864,¹⁰⁸ and he acted as Russell's counterpart in 1866 — Russell with the Austrian army and Hozier with the Prussians. *The Times* wished to send both Henry Hozier and his brother John, another serving officer, to the Franco-German War, but this time the British Government intervened, placing a strict embargo on serving or half-pay officers leaving the country — to Delane's scorn. 'Our ministers are in such a pitiable funk that I believe they sit in Cabinet on close stools.'¹⁰⁹

In the end, this ban does not seem to have been rigorously applied. Colonel Kit Pemberton, a colleague of Russell's for *The Times*, was killed at Sedan, and several younger serving officers, including Captain Henry Brackenbury, who was writing for the *Standard*, and Captain Nolan, correspondent of the *Daily News*, reached the scene of action.¹¹⁰ Henry Hozier also got there eventually, but he seems to have been despatched by the War Office less as a correspondent than in order to keep an eye on Colonel Beauchamp Walker, who was attached to the headquarters of the Prussian Crown Prince. Walker was indignant, and commented vigorously in letters to his wife.¹¹¹ He did not care

¹⁰⁸ Hankinson, Alan, *Man of Wars: William Howard Russell of The Times* (London, Heinemann, 1982), 193.

¹⁰⁹ Delane to Russell, probably 18 July 1870. Quoted in Hankinson, 212

¹¹⁰ Brackenbury, General the Right Hon. Sir Henry, *Some Memories of my Spare Time* (Edinburgh, Blackwood, 1909), 89.

¹¹¹ For a typical example see Walker, General Sir CP Beauchamp, *Days of a Soldier's Life* (London, Chapman & Hall, 1894), 343.

for war correspondents, and one of his objections to Hozier was the latter's continuing association with them.¹¹²

The attitude of the military establishment to these journalistic activities seems to have varied from time to time. Brackenbury later said that they had been jeopardising their military careers. 'And it had better at once be stated that at this time (the late 1860s) officers who wrote for the papers were not viewed favourably at the Headquarters of the army.'¹¹³ Still, he and his brother both did it, and their careers do not seem to have suffered. In fact, the more political of the rising generation of soldiers, and Wolseley in particular, began to appreciate the advantages of having their campaigns described by sympathetic pens.

Wolseley positively encouraged the members of his staff to form connections with the press, and this helped to present his campaigns to the public in the best possible light. Russell was not impressed. At the end of the Zulu War in January 1880, at a time when he was admittedly at odds with Wolseley, he wrote to his editor, savagely denouncing the employment of staff officers as correspondents. 'It is absolutely impossible to expect honest criticism, uncoloured statements, or even full information from men whose career and position are at the mercy of those whose acts and conduct they are called on to chronicle and analyse.'¹¹⁴

This criticism did not apply to their comments on continental armies. The reports of these wars by soldier-journalists undoubtedly made a significant contribution to change in British military thought, and their employment by the papers gave them the opportunity both to witness the events and hone their literary skills, though it will be argued in later chapters that it was generally through other means that they were able to exercise their influence most fruitfully.

¹¹² Walker to Earl Granville (privately), 6 and 7 Jan. 1871. However, his official letter of 9 Jan. does acknowledge Hozier's literary skill. PRO FO 64/729.

¹¹³ Brackenbury, *Some Memories*, 57.

¹¹⁴ Atkins, 294-5.

Two special cases — The Illustrated London News and the Pall Mall Gazette

The *Illustrated London News* was launched in May 1842 by Henry and Frank Vizetelly, two professional wood-block engravers. One of its features was that, as a weekly publication, it was able to offer summaries of what the daily papers had been reporting, and it was of course lavishly illustrated. It provided a forum for the promotion of the (broadly liberal) issues of which it approved, and this included strong support for the Volunteer movement. Unfortunately, the way that it sometimes expressed its opinions was unlikely to find favour with the military establishment. Professional soldiers were on the whole pleased to see the Volunteers encouraged, but they did not relish being told that an army of Volunteers, ‘composed of the best blood in the British Isles’, was fully capable of holding its own against the conscript armies of the continent, at minimal cost, and that its officers, up to the rank of colonel, should be elected by their men.¹¹⁵ Moreover, it proved to be indiscriminating in repeating titbits which it picked up from other sources, and presenting rumours as facts.¹¹⁶

The *Pall Mall Gazette* operated on an altogether higher plane, in terms of accuracy, analysis and style. This remarkable evening paper was launched in 1865 by Frederick Greenwood, who had previously edited the monthly *Cornhill*, and George Murray Smith, the distinguished publisher and progenitor of the *Dictionary of National Biography*. Its stated objectives were ‘.... to support the Liberal Government under Lord Palmerston; at the same time we were to be faithful to our purpose of independent criticism’.¹¹⁷ ‘Its tone has from the first been aristocratic, the tone of the club window, of the smoking room, of the House of Commons and of the drawing room.’¹¹⁸

¹¹⁵ *Illustrated London News*, 21 May 1859, 481-2 in bound volume.

¹¹⁶ Two typical examples from the campaign in Italy in 1859. Its account of Montebello reported the death in action of the Austrian General Benedek (28 May) and, when describing Solferino, it said the same of the French Generals Baraguay d’Hilliers, Leboeuf and Niel, with touching detail about how the last had expired in his Emperor’s arms (2 July).

¹¹⁷ Smith, GM, quoted in Robertson Scott, JW, *The Story of the Pall Mall Gazette* (London, OUP, 1950), 128.

¹¹⁸ *Ibid*, 126, quoting Charles Pebody’s *English Journalism*, 1882.

The fact that *Pall Mall* came out in the afternoon relieved it of the immediate pressure of competing with the other dailies to be first with the news. Instead, it could afford to be more analytical, and the calibre of its correspondents was sufficient to ensure that attention was paid to what appeared in its columns. Smith claimed that it ‘ . . . had a greater influence on public opinion than any other paper save *The Times*’, and Greenwood, the first editor, considered that he . . . occupied a place of power, at least equal to half a dozen seats in Parliament’.¹¹⁹

Its analytical discussions of military matters were notably well informed. Friedrich Engels, who had in his youth served as a *Freiwillige* (a volunteer cadet) in the Prussian artillery, was a regular contributor in this sphere, using the letter ‘Z’ as his usual signature. Many of the more technical articles were not signed. Over the years, the contributions relating to artillery, small arms and ammunition had a particularly authoritative air, and Engels may have been their inspiration, but, if he was not, the editor must have had access to someone with good professional connections. The value of these contributions will be seen more than once in the chapters which follow.

The Periodicals

The middle years of the nineteenth century witnessed an explosion in the number of periodical journals, which parallels that of the newspapers. Their circulations never approached those of the dailies; *Cornhill* and *Macmillan’s*, the biggest selling of the monthlies, appear to have averaged less than 20,000 each in 1870, and the best of the quarterlies less than 10,000; but they were designed for a different audience, and a large proportion found their way to clubs, libraries, common rooms and messes, where they could be read by many.¹²⁰

¹¹⁹ Ibid, 140,4.

¹²⁰ Figures from Woolven, Robin, ‘The periodical Press and the Question of National Defence 1868-1872’, unpublished MA dissertation, (London, 1982), 28.

For the present purpose they may be classified into three broad groupings; the literary magazines, the professional journals and a handful of specialist outlets for the airing of military and naval concerns.

Literary magazines. The readership was understood to be the educated and professional upper and middle classes, those who could be expected to have the leisure to consider analytical arguments in some detail and who might have a say in how the country's institutions were to be run. Most of these periodicals were not specialised. There were regular articles on travel, aesthetics and philosophical subjects, and most made a feature of serialising new works of fiction; but they did also address matters of the utmost public concern, and this frequently included articles about national defence and the security of the nation. In fact, between 1859 and 1880 the magazines referred to in the list in appendix B1 printed altogether some four hundred articles about military matters, and most of these were in response to the stirring events which were happening on the continent.

It was the custom in many of these periodicals for the authors to remain, in theory at least, anonymous, but an informed public was understood to be capable of identifying many of those responsible for the most important contributions. Recent researchers have benefited in this respect from the detailed work of the compiler of the *Wellesley Index*, and a note about this resource is in appendix B1.

Professional Institutions and their journals. For those who took a professional interest in the development of military thinking several institutions had been established to provide a forum for discussion and the formulation of policy. The most prominent of these bodies was The Royal United Service Institution, which met fortnightly to hear and discuss professional papers on military and naval affairs. Its journal regularly recorded and circulated the proceedings of these meetings, along with reviews of books and other professional information. The meetings were usually well attended, the participants were officers of distinction in their services and interested civilians, and the quality of the debate was high. It is noteworthy that on many occasions the Duke of Cambridge, as

President, took the chair, and in his absence the chairman would be of the calibre of General Sir William Codrington, Sir Montague Steele or Sir Garnet Wolseley.

The high quality of the discussions is worthy of comment, because this was a forum in which young professional soldiers with their reputations to make, men such as the Brackenbury brothers, Charles Chesney, Henry Hozier, EB Hamley, Lonsdale Hale and Robert Home, could make points to the most senior officers in the army, argue with them, learn from their experience and develop the contacts which would enable them, in their turn, to move on to high rank and responsibility.

The Royal Artillery Institution and its companion body in the other scientific corps, the Royal Engineers, provided a similar service of a more specialised nature, and their proceedings were also regularly circulated amongst their officers. There was of course a considerable degree of cross-fertilisation (for example Lieutenant Colonel CC Chesney, RE, delivered a lecture to the RA Institution on 13 December 1870, on ‘The reform of Prussian tactics’) but their main purpose was to provide for the continuing professional education of the officers of their own corps. Colonel Wilbraham Lennox’s Preface to a Series of Publications for Royal Engineer Officers, in June 1875, set out these objectives with commendable clarity, and the enthusiastic response is a good indication of the professional interest of that body.¹²¹

The published proceedings of these two institutions demonstrate the degree of their interest in what was going on in Europe. To take one typical example, the *Professional Papers of the Corps of Royal Engineers* for 1878 contain eighteen papers; of these, eleven relate to the activities of continental armies, and the variety of topics is instructive;

- Firing tests at Spezzia, translated by Lieut.-Colonel Maquay, RE
- Organisation of the Imperial Russian Engineers, translated from the German by Captain J Gore Booth, RE
- On entrenchments, by Major-General Bainbrigge, RE, incorporating extracts translated by him from Lieut.-General von Hanneken’s ‘Remarks on the Russo-Turkish War’

¹²¹ Illustration 8 and page 243.

- Report of General Todleben on the investment of Plevna and surrender of the Turkish army, November 28, 1877 (OS), translated from the Russian by Captain GT Plunkett, RE
- The third battle of Plevna, September 7-12, 1877, part I, translated from the French by Captain GT Plunkett, RE
- Ditto, part II, translated by Lieut. AO Green, RE
- Personal equipment, by Captain T Fraser, RE, relating to his experience in European and Asiatic Turkey
- Reminiscences of the campaign in Armenia, by Captain H Trotter, RE
- The entrenched camp of Plevna, translated from the French by Captain C Woodward, RE
- Extracts from '*Instruction sur le service de l'artillerie dans un siège, 1876*', translated by Captain T Fraser, RE
- A letter from General Todleben to General Brialmont, on the defence of Plevna, translated from the French by Captain JW Savage, RE.¹²²

The specialist military magazines. The most notable of these were *The United Service Gazette*, *Colburn's United Service Magazine* and *The Naval and Military Gazette*, which Hew Strachan has described as 'extremely virulent professional publications'.¹²³ These publications flourished throughout the years which concern this study. They were the trade journals of the period. On the whole they provided an admirable forum for serving officers to discuss details of administration or general interest at regimental level, and to air their grievances about pay and promotional prospects. Amongst this plethora of domestic detail there were occasional attempts to address matters of more elevated importance, and some of these occasions will be referred to in later chapters, but, as was pointed out at the time, circulation was confined to a limited professional body, and their influence on the people in a position to make decisions was not powerful.

¹²² *Professional Papers of the Corps of Royal Engineers*, vol. 2 (Chatham, Royal Engineer Institute, 1878). The linguistic skills of officers like Plunkett are worthy of note. The Royal Artillery could demonstrate similar accomplishments; the eighteen year old Lieut. Grierson translated Todleben for the RAI the same year. (see page 44). The value of the work of these, and other similarly gifted, officers will be seen in all the later chapters of this study.

When it comes to specific issues, therefore, the daily newspapers and the specialist journals for regimental officers were certainly less important in creating the climates of opinion within the circles which counted than the periodicals, proceedings and institutions which have been described. Between them, these last were the mechanisms through which those with specialised knowledge, and indeed anyone who felt that they had something valuable to contribute, could make their views known at a level where they could exert some influence. Material of this kind, supported as it usually was by detailed analysis and developed at length, made more impact on the decision-makers than anything which appeared in the daily press.

Commissions and Committees The pressure of events, whether crises of anxiety about the defence of the realm, conflicts of interest between the champions of the navy and the army for resources, or the endless desire of ministers to reduce the amount of the nation's money which the forces absorbed, resulted in an almost continuous succession of Royal Commissions, Parliamentary and Special Committees to examine one or another aspect of the army's structure. In 1859 Promotion and Retirement in the Army had just been the subject of one Royal Commission (HC 1857-8,xxix, 241), and this was followed immediately by others to examine the Militia (HC 1859,ix, 5), Defences (HC 1860,xxiii, 431) and Recruitment (HC 1861,xv). Throughout the next twenty years the flow continued, culminating, for the purposes of this study, in the appointment by the Secretary of State of a Committee of General and other Officers of the Army on Army Re-organization under the presidency of Lord Airey (PP 1881,xxi, c2791), which reported in March 1880.

The amount of evidence presented to these bodies was formidable, and demonstrates the concern of those involved to learn all that they could from practice in other countries. The 1870 Commission on Military Education (HC 1870,xxv, 223-602), for example, not only recorded long and detailed reports from the military attachés in the

¹²³'The early Victorian army and the nineteenth century revolution in government', *EHR*, vol. 95, 1980, 786.

European capitals but sent the secretary, Lieutenant John Hozier, to Paris and Berlin to accumulate more information.

How much effect this continuing activity had on the way that the British army was organised, equipped and trained will be the business of the following chapters, which examine the individual issues in turn.

Chapter 3 Changing Technologies

This chapter will examine the reactions of the British army to the effects which technological advances were inducing in other armies. It will not be possible to include every area of technology in the survey, because the field is so wide, and the chapter will concentrate on those areas where the impact of technical change was most strongly felt; fortification, railways, telegraphs and signalling systems, artillery, machine guns and small arms. Matters relating to health and hygiene, food production, uniforms and personal equipment will not be entirely ignored, but they will be looked at in other chapters, when they impinge on topics such as army organisation and training.

Fortification

For fifty years the British people had been accustomed to thinking of themselves as safe from the danger of invasion from abroad. Occasional voices had been heard to say that this feeling of security was a delusion,¹ but even the old Duke of Wellington had found it difficult to convince the public at large that there could be a threat so long as the Royal Navy stood as the nation's bastion.

This happy feeling of insulation from continental threats was suddenly put into question in 1858. In January of that year there was an attempt on the life of the French Emperor, and the fact that the plotters had been able to lay their plans in England caused great indignation in Paris. Colonel Claremont, who was Military Commissioner at the British embassy, submitted a series of reports of increasingly bellicose comments by French military and naval leaders, and his letters of the period record the concern which this created in the minds of politicians and soldiers in Britain, including the Secretary for War.² It seemed that there were after all dangers, and that these might even be pressing. Gladstone, who was about to

¹ Burgoyne, JF, 'Memorandum on Defences for Great Britain', November 1856, PRO WO33/8, 471-84, is typical of professional concerns, and identifies France as the obvious threat. See note 8.

² Report, 14 March 1858, letters 16 May 1858, 18 June 1858 and 25 June 1858, Cowley Papers. PRO FO 519/168. Extracts from these documents are in appendix B2.

succeed Disraeli as Chancellor of the Exchequer, and who was not a man to encourage additional defence expenditure, had nevertheless acknowledged in an article published just before the war between France and Austria in Northern Italy that there were valid grounds for thinking that Napoleon III was looking for a fight, ‘ that England and Austria were the involuntary and unconscious competitors for the honour of his choice; and that with a laudable, perhaps a cold-blooded, impartiality, he was rather inclined to select England of the two’³

The need to put the country into an adequate defensive posture led to new appraisals of the army in general, the reserves and volunteers, the railways — and the physical defences. Fortifications, which had last been overhauled during the wars with the first Napoleon, but otherwise had generated little concern since the end of the domestic wars in the seventeenth century, were critically examined once again. As General Sir John Burgoyne, the Inspector-General of Fortifications, put it in a memorandum to the Secretary for War;

however circumstances may hitherto have led to the predominant feeling that fortifications at home were unnecessary, there are few people who are not now persuaded that the new circumstances of steam navigation and the nearer balance of Naval Powers in the world, added to the enormous development of military means and resources in various Continental States, now render such precautions absolutely necessary.⁴

The newspapers encouraged their readers to enlist in the Rifle Volunteers, and the more technically minded commentators used the columns of the periodicals to analyse the danger in detail. It was recognised that, for reasons of geography, the main ports, arsenals and depôts on which the defence of the country ultimately depended were particularly vulnerable to assault from the landward as well as the seaward side. Burgoyne had drawn attention to the threat arising from the increased range of modern artillery.

It being now ascertained that these guns can throw shot and shells as far as 9,000 yards, and with considerable accuracy, it becomes a matter for urgent consideration, how these and such extensive and important establishments, can be best protected from their destructive effects.⁵

³ Gladstone, WE, ‘Foreign affairs --- war in Italy’, *The Quarterly Review*, vol.105, April 1859, 532.

⁴ Burgoyne to Herbert, 11 May 1860. *Broadlands Papers*, Papers respecting National Defences, University of Southampton, ND/A/26-36.

⁵ Burgoyne, Memorandum on the probable effect of the Rifled Cannon on the Attack and Defence of Fortifications. 1859. PRO WO 33/7, 2. This memorandum also appears in PRO WO33/8. See note 8, below.

James Fergusson, already an acknowledged expert on fortification, set out the dangers in a long article in July 1859.⁶ There was an immediate threat; the French could well get an army of 200,000 men on shore, and the country would be hard put to it to find an adequate force to oppose them. London might have to be abandoned, but the main dockyards must be made defensible so that the navy would be able to deprive the invader of communications, and a great fortified base established in the Midlands. JE Addison reiterated the theme in *Fraser's Magazine* in December, though he felt that it was essential to fortify and defend London as well.⁷

These were forceful descriptions of the problem, but they did not offer solutions. Action to identify what should be done, and then do it, would as always depend upon ministerial response. Fortunately, the government which assumed office in June of that year was led by a politician who was well suited by experience and temperament to taking up at least the first part of the challenge. Palmerston was no better placed, in terms of the political realities, than any previous British statesman to initiate the long-term improvements in defence arrangements which were ideally necessary, but he was very ready to be seen to look firmly at short-term measures to resist a threat. In August he appointed a Commission to look into 'the Condition and Sufficiency of the Fortifications existing and projected for the Defence of the United Kingdom, and on the most effectual means of placing the Kingdom in a complete State of Defence'. Their report, published on 7 February 1860, recommended a far-reaching programme of improvements, at a cost of £11,000,000.⁸

Sidney Herbert, the Secretary for War, said that the money must be found, even if the

⁶ Fergusson, James, 'The invasion of England', *The Quarterly Review*, vol. 106, July 1859, 245-84.

⁷ Addison, JE, 'The national defences', *Fraser's*, vol. 60. Dec. 1859, 643-60.

⁸ PRO WO33/8 contains the Collected Memoranda and Reports on Home Defences which provided the background for their study, starting with a memorandum by the late Commander-in-Chief, Lord Hardinge, in 1852, and including many detailed reports by Burgoyne, Jervois and other officers. The full list of contents is on pages 437-8 of that document.

government had to raise a loan⁹. By the time the report appeared, however, the immediate danger of invasion from France was felt to be receding. Palmerston continued to insist in parliament that the programme should proceed, but he had little support from his chancellor, and there was vociferous opposition from the naval lobby, who felt that any money available should be spent on ships rather than fortifications.¹⁰ Accordingly, progress was slow.¹¹

Just how seriously ministers had in fact taken the threat of invasion remains a matter for debate.¹² The enthusiasm to enroll in the Volunteers suggests that the public accepted it. On the other hand Claremont's letters make it clear that he had never been convinced that there was a real danger, and they give more than a hint that prominent members of the establishment, including the Queen, senior soldiers and the new Secretary for War, regarded the scare mainly as a good opportunity to persuade the public and parliament to accept the need for greater expenditure on the army.¹³

In the event, the slowdown in expenditure on fortifications was not entirely disadvantageous, since the implications of the recent rapid developments in military and naval technology which Burgoyne had described had not been fairly evaluated on the field of battle in Europe, and it was not yet clear what the detailed improvements should consist of. Experts such as Fergusson and Tyler advanced conflicting views about the merits of earthworks and masonry or armoured plate, but the experience on which they had to rely was of the assaults on the Malakoff and the Redan, and it was recognised that the improvements in the destructive power of artillery since 1855 would require a more formidable resistance

⁹ Memorandum on Fortifications, 13 Dec. 1859. PRO WO33/8.

¹⁰ This point of view is forcefully expressed, for instance, in two contemporary articles in the *United Service Magazine*; 'National defences — the report of the Commissioners' and 'The defences of the United Kingdom, and the report of the Royal Commission', *USM*, 1860 pt.2, 375-7 and 526-85.

¹¹ Woodward, EL, *The Age of Reform*, (Oxford, Clarendon Press, 1946), 163-73.

¹² Ian Beckett, for example, argues that General Peel and the Government did not regard it as a serious threat; he says of the Volunteer Force that '...its *raison d'être* — invasion — was largely hypothetical'. *Riflemen Form*, 260.

¹³ In particular, Claremont's letters of 25 and 29 June, and 8 July 1858, 29 March and 1 August 1859. PRO FO519/168. Extracts from these letters are in appendix B2.

than these.¹⁴ To be sure, Burgoyne had already made his own views known in the 1859 memorandum, with its emphasis on ‘bomb-proofs and screens of earth’ rather than ‘escarp walls that are exposed to view’, but proof of their effectiveness was required.¹⁵ The committee set up to report ‘upon the probable influence of the new rifled cannon upon existing Fortifications, and future Plans for new Works of Defence’ had to acknowledge that

.... it is possible, when the rifled cannon come into general use in warfare, modifications may be suggested in the construction of works of defence, to meet, as far as practicable, the increased power of artillery; but such modification must be the result of actual experience;¹⁶

The outbreak of the American Civil War in April 1861 provided the opportunity to gain this experience, and a new military threat enhanced the urgency of the research. Relations between the British and Federal governments had been strained for some time, and the ‘Trent’ incident brought matters to a head. There was a real possibility that the two countries would go to war, and during November and December 1861 urgent measures were taken for the defence of Canada against invasion from the South.¹⁷ Several reports to the Secretary for War, Sir George Cornwall Lewis, stressed the need for the physical defences of the key bases to be strengthened.¹⁸ Closer to home, memories of the depredations of John Paul Jones triggered renewed alarms for the coasts of the British Isles; a Mr. Moncrieff wrote from Edinburgh to say that the Americans would indulge in ‘all manner of buccaneering’ on the East coast of Scotland, with Aberdeen a particularly vulnerable target; it was deplorable that no defensive works had been completed. Lewis sought the advice of Burgoyne, who replied that there was indeed a limited threat from both America and France, and not just to Aberdeen; forts should be built, to be manned by the Volunteers, despite the expense. The Home Secretary concurred, so far as the threat from France was concerned, while making the

¹⁴ Fergusson, ‘The invasion’. Tyler, WH, ‘The rifle and the spade, or the future of field operations’, *JRUSI*, vol.3, 1860. Dr MD Welch says of Tyler that ‘(m)embers of the Royal Family, members of government and senior generals all listened attentively to Tyler’s ideas.’ *Science in a Pickelhaube*, (London, RUSI, 1999), 2.

¹⁵ Burgoyne, 1859 memo., 2-3.

¹⁶ PRO WO33/8, 607. A similar practical observation relating to testing the relative merits of muzzle-loading rifles can be seen in the report of the Enfield and Whitworth Committee, 5 November 1858. PRO WO 33/7.

¹⁷ Until most of the British North American colonies were brought into a Federation in 1867 the name Canada, strictly speaking, only embraced two of the provinces, but for convenience the modern usage is employed here.

¹⁸ The Harpton Court Papers include the following; MacDougall, Colonel P, ‘On the prospect of war with the U. States’, 3 December 1861 (2943); de Grey, Lord, ‘Defence of the West Indies’, 3 December 1861 (2946); Seaton, Lord, ‘On the defence of Canada’, 9 December 1861 (2958); Burgoyne, Sir John, ‘On military

good point that the activities of American privateers in the modern era of steam propulsion would be severely limited by their lack of convenient coaling stations. A tart minute from the First Lord of the Admiralty brought this correspondence to an end. Instead of these vague speculations, it suggested, an hour's discussion in a cabinet committee meeting at the Admiralty could determine what needed to be done, taking into account the significant resources available to the navy and naval coast volunteers.¹⁹

Meanwhile, Burgoyne was taking steps to benefit from the practical lessons which the American war provided. Jay Luvaas, in his detailed and stimulating account of the impact of this conflict on military thought in the world at large, has described how Burgoyne was able to send two officers to America with meticulous instructions about the technical information which they were to collect, and the whole-hearted co-operation which they received there from General Totten and his colleagues.²⁰ Further visits supplemented what they had learned; Captain Richard Harrison, accompanying Colonel Jervois, Burgoyne's assistant, on a mission to review the defences of Canada in 1863, recorded their observations of the Federal armies in the *United Service Journal*, while another sapper officer, Lieutenant Featherstonhaugh, published an account of the Confederate works at Petersburg the following year.²¹

This experience was undoubtedly valuable in providing evidence of what worked on the ground, and it tended to reinforce the opinion that earthworks were to be preferred,²² but Burgoyne was not prepared to accept every American judgment. He showed this in a report in February 1865 about the lessons to be learned from the capture of Fort Fisher, in which he pours scorn on the absurdity and ignorance of warfare on land shown by Secretary Stanton and Admiral Porter in their assessment that this fortress was more formidable than the

operations against the United States', received 14 December 1861 (2984); de Grey, Lord, 'Defence of Quebec', 26 November 1862 (2994).

¹⁹ Harpton Court Papers; Moncrieff, 4 December 1861 (2952); Burgoyne, 7 December 1861 (2953); Grey, G, undated (2954); Somerset, Duke of, 15 December 1861 (2955).

²⁰ Luvaas, Jay, *The Military Legacy of the Civil War*, new ed. (University Press of Kansas, 1988), 9-11.

²¹ Harrison, Captain R, RE, 'A trip to Meade's army on the Rappahanock', *United Service Journal*, vol. 105, May-August 1864. The article is unsigned; the attribution is Luvaas's, op cit., 28. Featherstonhaugh, Lieutenant, RE, 'Notes on the defences of Petersburg', *PPRE*, vol. 14 1865.

²² Jervois, Lieutenant-Colonel WFD, Report on the Defence of Canada, Made to the Provincial Government on the 10th. November 1864, and of the British Naval Stations in the North Atlantic: Together with Observations on the Defence of New Brunswick, etc., London, 1865, PRO WO 33/15, 15.

Malakoff.²³ That serious attention could be paid at the highest level to such reports is demonstrated by a note written in the margin; ‘And moreover the Difference between assaulting a work defended by a large army in its Rear and carrying a Fort isolated and garrisoned by 1200 men’; signed ‘Palmerston’.

The gradual cooling of the tensions between the Federal and British governments in the later stages of the war, and improved relations with Imperial France (whose expansionist ambitions were now being concentrated on areas of less concern to British interests), allowed the establishment to feel that any remaining threat to the soil of Britain had passed — and with it the pressure to continue to spend large sums on modernising fortifications. Much, indeed, had been achieved, as was duly noted by Colonel Jervois in a War Office memorandum summarising the position in July 1864, but only half the money which the committee had recommended had been spent;²⁴ and even this limited success may have been due, at least in part, to the intervention of the Queen, who was sure that Prince Albert, who had died at the height of the crisis in December 1861, would have insisted on the continuation of the programme.²⁵

Some concern for the safety of Canada remained, and the lessons learnt from American experience were still particularly relevant there;²⁶ but attention had turned once more to Europe, as Prussia’s drive to achieve a position of dominance in a united Germany embroiled the continent in an escalating pattern of violence. The Austro-Prussian War of 1866 intrigued, even startled, British observers because of its speed and decisive conclusion, and while they were assimilating the lessons to be learnt from that fact there was little attention to spare for any study of fixed fortifications. The exception is one account in the *Professional Papers of the Royal Engineers*, where the technical interest of the author in the subject, rather

²³ Burgoyne, ‘Capture of Fort Fisher’, 8 February 1865, Broadlands Papers, University of Southampton, CAB/183-93.

²⁴ Jervois, Present administration of Lord Palmerston, 6 July 1864, Broadlands Papers, ND/A/45. The text is in Appendix B2.

²⁵ General Charles Grey to Sir George Lewis, 2 April 1862. Harpton Court Papers, C/1325. The text of this letter is in Appendix B2.

²⁶ Simmons, Colonel JLA, RE, *Defence of Canada Considered as an Imperial Question* (London, Longmans, 1865) emphasises this.

than its intrinsic importance to the campaign, leads him to examine the details of fortress construction.²⁷

The war which now broke out between the Prussian-dominated States of Germany and France in August 1870 reopened every question, including that of the sanctity of the shores of Britain. This was brought to the attention of the public by the appearance of *The Battle of Dorking* in the pages of *Blackwood's* in May 1871. This dramatic work undoubtedly made a big initial impression on the public, but in the end seems not to have had much lasting influence on the reorganisation of the army.²⁸ All in all, despite the recurring *frissons* of excitement which works like these continued to create, it is difficult to avoid the feeling that an assurance that Britain itself was inviolable had once again captured the public mind, with the comforting message that it was not necessary to spend large sums of money on fixed defences.

Soldiers, certainly, continued to take a professional interest in technological developments in the art. Lieutenant-Colonel Charles Chesney and Major Stotherd, two respected sapper officers, were sent to the continent in the immediate aftermath of the Franco-German War, in June 1871, and one of the main parts of their brief was to report to the Inspector-General of Fortifications on the general state of the French army, including their fortifications. Their observations about Péronne and Verdun probably provoked only mild interest at the time, but they make poignant reading in the light of the events of 1916-17;

The knot or nest of fortresses accumulated on this portion of the French frontier (Péronne), and once thought to make it well nigh impregnable, would in future offer but a slight obstacle to an invading army These works are completely dominated by hills from 100 to 250 feet in height, and from 1,500 to 2,000 yards distant from the town.²⁹

There seems to be some idea that the French, now that they have lost Metz, will convert Verdun into a first-class fortress. This might be done very effectually by occupying the hills commanding it by means of a system of

²⁷ Webber, Captain CE, RE, 'Notes on the campaign in Bohemia in 1866', *PPRE*, vol.16, 1868, 34-59.

²⁸ See page 23.

²⁹ Report dated 24 -27 June 1871, PRO WO33/24, 408.

detached forts, and, with such addition, there seems to be no reason why it might not be made a very strong place.³⁰

The pages of the Engineers' professional journal continued to include fortification in the consideration of the lessons to be learnt from the war,³¹ and the topic occasionally earned a mention in more general publications. For example, an article in *Blackwood's* in 1875, while savagely criticizing the shortcomings of French army organisation in general, said that much good work had been done on strengthening their fortifications.³²

Certainly, there continued to be great professional interest in developments on the continent, but little in the writing suggests that a need was felt for an active response on the British side to defend the island itself. The concern appears to have been partly professional interest in the technology, and partly a desire for reassurance that the British interests in preserving a balance of power in northern Europe and the continuing integrity of Belgium were not about to be disturbed again. A report of Henry Brackenbury's in 1876 exemplifies this, as he describes the increasing sophistication of the chain of Belgian frontier defences.³³

Exceptionally, one thoughtful soldier did express a serious concern for British domestic security. During 1871 Colonel Robert Home was writing a series of articles in *Macmillan's* about army organisation and the defence of the country, and he found an ominous warning in the siege and capitulation of Paris. 'What lessons then are we to learn from French calamities, if not *that in modern war the capital of the State must be fortified* if the State is to make a successful resistance?'³⁴ His solution harks back to those proposed a decade earlier; a ring of forts at two-mile intervals with a circumference of seventy miles round London. However, the prevailing climate of opinion was unreceptive; Gladstone and Cardwell were seeking to reduce, not increase, the defence budget, and it seemed that the issue could be forgotten.

³⁰ Report dated 4 August 1871. PRO WO33/24, 45.

³¹ For example, *PPRE*, vol. 20, 1872, is entirely devoted to the Franco-German War, and fortifications figure amongst the topics discussed.

³² Marshall, Frederic, 'The state of the French army', *Blackwood's*, vol.118, August 1875, 125-41.

³³ Brackenbury, Colonel H, RA, Minute in 'Abstracts of Proceedings of the Department of the Director of Artillery for the Quarter ending 31 December 1876', PRO WO33/31.

³⁴ Home, Robert, 'London fortified', *Macmillan's*, vol.23, Feb. 1871, 278.

A new impetus was given to the study of defensive works in general by events in the Balkans. Uprisings in the Turkish European provinces, and their bloody suppression, resulted in full-scale war between Russia and Turkey in 1877. Advancing Russian armies had little difficulty in crossing the Danube and seizing the frontier fortresses, and an energetic thrust by their advance-guard carried the vital Shipka Pass through the Balkan mountains, but their progress towards Adrianople and the Bosphoros was delayed by the effective resistance of the Turkish forces defending Plevna.³⁵ Plevna was not a traditional fortress, but the Turks, arriving there in haste, took energetic steps to create an entrenched camp replete with field-works and redoubts, behind which they defied the assaults of the Russian army for four months.³⁶ This siege generated enormous interest amongst military professionals everywhere;³⁷ and its strategic importance has been emphasised ever since. AJP Taylor illustrates this with characteristic vigour. ‘Plevna is one of the few engagements which changed the course of history’, he asserts, explaining that the delay it caused stopped the Russians from totally destroying the Turkish empire; ‘.... though the Turkish army was in collapse by the end of the year, the Russian was little better’.³⁸

No doubt Taylor’s judgment is just, to the extent that the Russian government would have found it difficult to sustain a long campaign at such a distance from the centre, but he is wrong about the state of the army. The testimony of the military observers with the troops emphasises the robustness with which the Russian soldiers withstood the rigours of a winter campaign in mountainous country and, crucially, the impact of the arrival of massive

³⁵ Greene, FV, *Report on the Russian Army and its Campaigns in Turkey in 1877-1878*, reprinted (Nashville, the Battery Press, 1996), 163-280. This report, written by a specially appointed American military observer and commissioned by the American Secretary for War, gives a clear narrative of the whole campaign. It is significant that this work, originally published in the USA in 1879, was immediately made available in a British edition, (London, WH Allen, 1880).

³⁶ Greene, 193 and Plate 12.

³⁷ *PPRE*, vol. 5 (1881), is entirely devoted to Captain GS Clarke’s account of the siege, and its impressive bibliography lists numerous Russian, German, Austrian and French, in addition to the British, works on the subject. General Todleben’s report to the Russian Commander-in-Chief had already been translated for *Proc RAI* (vol.10,1877, 369-78) by Lieutenant JM Grierson, RA (at the age of eighteen) and for *PPRE* (vol.2, 1877, 81-90) by Captain GT Plunkett, RE.

³⁸ Taylor, AJP, *The Struggle for Mastery in Europe 1848-1918*, paperback edition (Oxford University Press, 1971), 245.

reinforcements of experienced fighting men, whose lack had contributed to the setbacks of the early part of the campaign.³⁹

What particularly attracted the interest of professional soldiers to the siege of Plevna was its demonstration of the defensive power of rapid rifle fire from behind entrenchments, and it can be argued that this caused them, at the time and since, to pay less than due attention to the rest of the war, particularly the campaign in Armenia; but before pursuing this topic it will be necessary to step back some years and look at the evolving study of field works and entrenchments.

Field works and entrenchments

Any thematic approach to a military topic creates a difficulty; the problem of trying to disentangle one aspect from all the others which impinge upon it, and treat it in isolation. This is particularly true of field works, because of the necessary involvement of issues relating to the effectiveness of weapons, the quality and provision of equipment, and their effect on battle doctrine and tactics. The intention of this section, therefore, is to summarise the evolving pattern of thinking about field works in the British army in the light of the experience of the wars of the period, accepting that some of the same ground must be covered again in other sections of the study.

In 1859 the British army's most recent experience of sophisticated warfare was in the Crimea. That campaign had taught more lessons about permanent fortifications than about field works and entrenchments, but it had not escaped the attention of thoughtful men that the technical developments which had dictated a new approach to the former would also cause fundamental changes in the open field. Evidence of this appeared in early April. James Fergusson wrote a long article in the *Edinburgh Review* saying that the days of close-order drill were over, or should be, and that from now on entrenchments and earthworks were the

³⁹ Greene, 366-74, 416-17.

only means of protecting soldiers in the field against the new rifled small-arms and cannon.⁴⁰ The same month, Captain WH Tyler, RE, presented a paper to RUSI to make the point to a professional audience.

Infantry and artillery fire have now acquired a fearful increase of power, and it seems probable, that entrenchments, instead of being useful auxiliaries, to be employed occasionally, will eventually become a main feature, even of operations conducted in the open field.⁴¹

The war which was about to break out in Italy rather contradicted than supported this opinion, and many of the participants, Austrian as well as French, came away with the conviction that the epitome of the *furia francesca* — the galling use of a swarm of skirmishers and short-range cannon followed by a headlong assault in close order — was still the dominant factor on the battlefield.⁴² The tenacity with which this doctrine was maintained thereafter, in the teeth of so much contradictory evidence, can only be compared with the continuing faith of cavalrymen in the decisive impact of their sabres.

The contrary evidence was not long in coming. As professional attention focused on the American Civil War, and once their initial disdain for what they saw as the blunderings of these amateur warriors had been to some extent overcome, observers realised that entrenchments had indeed become what Tyler had predicted. British observers, in particular, fastened onto this aspect. Colonel Charles Chesney returned repeatedly to the theme; in two articles in the *Edinburgh Review* in 1865 and 1866, and another in the *Fortnightly Review* in 1875, he reiterated that lessons must be learnt, not least that field entrenchments were a decisive factor.⁴³ More importantly, in terms of influencing the military establishment, he emphasised the same message in a lecture at RUSI in April 1865. The Commander-in-Chief, the Duke of Cambridge, was in the chair, and, in his closing remarks, said that, of the two vital points which he would take away,

⁴⁰ Fergusson, J, 'Rifled guns and modern tactics', *Edinburgh Review*, vol. 109, April 1859, 514-45.

⁴¹ Tyler, Captain WH, 'The rifle and the spade', 1 April 1859, *JRUSI*, vol.3, 170-94, 184.

⁴² Charles Chesney, for example, said that there were no new tactical lessons to learn from Magenta and Solferino, which were fought in the style of the wars of Napoleon I. 'The study of military science in time of peace', 5 May 1871, *JRUSI*, vol.15, 232-68, 262.

⁴³ 'The last campaign in America', *Edinburgh Review*, vol. 121, Jan. 1865, 252-88. 'Recent changes in the art of war', *Edinburgh Review*, vol. 123, Jan. 1866, 95-130. 'Sherman and Johnston, and the Atlanta campaign', *Fortnightly Review*, vol. 18 ns, 1875, 611-24.

(o)ne is, that in this war, and, I think, in all future wars, the spade must form a great element in campaigns. even the movements in advance were instantly confirmed, I may say, by the position being entrenched in a manner which would preclude the danger of attack.⁴⁴

The Austro-Prussian War, coming so soon after the end of the American war, now focused attention on the issues which were felt to be responsible for the speed and decisive nature of this short campaign, and interest in entrenchments rather diminished. Nonetheless, some of the specialists continued to stress that practical answers to the increasing killing-power of battlefield weapons must be found. Majendie continued to analyse progress, in a series of articles in *Cornhill*, and in one of these, in May 1869, he contrived to call in aid the current interest in the skirmishing tactics of the successful Prussian army to support the need for entrenchments;

We must now strive to protect our troops from the deadly fire which will henceforth be brought to bear on them Hitherto, this branch of the subject has been strangely neglected. Abroad it is not neglected ---- nearly all the great Continental armies are busy instructing their troops in the art of seeking and obtaining cover. This is to be done in two ways: by the improvement of the skirmishing drill, and by the adoption of an efficient and ready system of field entrenchment.⁴⁵

Colonel Gerald Graham reiterated the message at a RUSI debate the following June, shortly before the outbreak of the Franco-German War. Drawing copiously on the American experience he emphasised what he understood to be Austrian and French doctrine that entrenchments were essential, and were invulnerable to assault from the front by unsupported infantry.⁴⁶

Whether these doctrines had truly been taken to heart by continental armies was now to be revealed. Contemporary narratives of the fluid opening phase of the Franco-German War suggest that they had not, but commentators did lay stress on the diligence with which the Germans constructed their lines of circumvallation round the besieged fortresses as the

⁴⁴ Chesney, CC, 'Sherman's campaign in Georgia', 7 April 1865, *JRUSI*, vol. 9, 1865, 204-20, 220. The second point related to the future of cavalry.

⁴⁵ Majendie, VD, 'The new military breech-loader', *Cornhill*, vol.19, May 1869, 599.

⁴⁶ Graham, Colonel Gerald, VC, 'Shelter trenches, or temporary cover for troops in position', *JRUSI*, vol.14, 1871, 448-78.

campaign developed.⁴⁷ The first official British analysis of the war, issued by the Topographical and Statistical Department of the War Office in November 1871, in the form of an edited compilation of the reports of the British military attachés and observers, claimed that ‘(n)umerous instances might be cited to show how important a part the spade played in the late campaign’ and pointed out that one of the few French successes arose from a failure by the Germans to guard against a sortie from Paris, which the French then exploited ‘....with an enormous amount of work’ in entrenching the captured positions.⁴⁸

There is some evidence that professionals in the British army had, for the moment, absorbed the right messages, as a lecture given at RUSI in January 1874 demonstrates.⁴⁹ Colonel Schaw was Professor of Fortification and Artillery at the Staff College, and he combined his study of the writings of Captain Goetze (of the Prussian Engineers) with his knowledge of the American war to formulate detailed proposals for the British army; a higher proportion of sappers, and infantry and cavalry to have constant sapper support in the field; all troops to have adequate equipment to clear the ground in front of their positions (*‘Freimachen des Gesichtsfeldes’*); troops to be trained for night assaults to reduce the defensive advantage of the trenches.

Plevna soon provided graphic evidence of the validity of these injunctions, and the host of reports of events there was seized upon by soldiers who wanted to carry the argument forward. There were two significant lectures and debates at RUSI in 1878. In January a young cavalry officer talked of American trials which showed that properly equipped soldiers could bury themselves from view in six minutes, and that in his opinion the Turkish trenches were too deep.⁵⁰ This was followed in June by another, attended by soldiers, sailors and civilians who had seen the war (including the Chairman of the meeting, Lieutenant-General Sir Arnold Kemball, Admiral Selwyn and Mr CB Norman), and clearly intended to drive this

⁴⁷ Chesney. Report, ‘Musketry trenches’, 454. PRO WO 33/24.

⁴⁸ Wilson, Captain CW, RE, *Extracts from the Reports of the Military Attachés who accompanied the French and Prussian Armies during the Campaign of 1870-71*, (London, War Office, 1871), 16. PRO WO 147/23.

⁴⁹ Schaw, Lieutenant-Colonel H, RE, ‘Field-engineering; illustrated by some of the operations of the German engineers during the war of 1870-71’, *JRUSI*, vol. 18, 1875, 18-54.

⁵⁰ Graves, Lieutenant FJ, 20th Hussars, ‘On military equipment’, *JRUSI*, vol.22, 1878, 126.

message, among others, home.⁵¹ The lecturer, another Professor of Fortification (at Greenwich), drew copiously on the writings of observers to show that the lessons learnt from the American war had been vindicated by the Turks; how assiduously they entrenched themselves, provided that they had engineers to support them; and how vital it now was for all troops to have a sufficient supply of entrenching tools which they had been trained to use.

It seemed that the truth of this was now accepted without argument. The Royal Artillery Institution's prize essay topic in 1879 acknowledged '.... the general adoption of field entrenchments on the field of battle',⁵² and discussion turned to the details of digging equipment for the soldiers.⁵³ In the Spring of 1879 tests were carried out on a tool based on continental designs, but '.... the spade, when tried, broke after three minutes' use; it is not suitable as an intrenching tool'.⁵⁴

On the face of it no more than a trivial incident, typical of what happens in testing new equipment, this brusque dismissal of one tool may be an early sign of an underlying resistance amongst the military to the logic of what they were hearing, a resistance which came to dominate the thinking of the twenty years which follow the end of the period of this study. Despite all the evidence, continental armies were beginning to have second thoughts about the relative powers of the defence and the offence, and consequently about the importance of field entrenchments.⁵⁵ While the long defence of Plevna had generated so much initial interest (no doubt partly because of the respect with which Todleben's opinions were treated), more attention now began to be paid to the successes of bold offensive actions in the Armenian campaign, notably the destruction of Moukhtar Pasha's army at Aladja Dagh and the storming of the fortress of Kars.⁵⁶ A new generation of military thinkers — men such

⁵¹ Needham, Captain John L, RMA, 'Lessons from the late war', *JRUSI*, vol. 22, 1878, 941-56.

⁵² See the Silver Medal Essay; Elles, ER, 'On the question whether any development of the material of Field Artillery is necessitated by the general adoption of field entrenchments on the field of battle; and if so, on the direction such development should take', *Proc RAI*, vol. 10, 1879, 558.

⁵³ James, Captain Walter H, RE, 'Modern fire: Its influence on armament, training and tactics', *JRUSI*, vol. 24, 1880, 382-3.

⁵⁴ 'Abstracts of Proceedings of the Department of the Director of Artillery, for the quarter ending 30th June 1879', PRO WO 33/34, Minute 36,894, 28 April 1879, 271.

⁵⁵ Howard, ME, 'The Armed Forces', ch. 8 in *The New Cambridge Modern History*, vol. 11, (CUP, 1960), 209.

⁵⁶ The index to Vol. 10 of *Proc RAI*, 1879, reveals that that versatile young soldier James Grierson had also translated 'The war between Russia and Turkey in Asia Minor, 1877' from *Löbells Jahresberichte*.

as Blume and Bernhardi in Germany, and Bonnal and the disciples of du Picq in France — was rediscovering the doctrine that the offensive spirit could overcome any obstacle. ‘Indiscretion, it would seem, had become the better part of valour’, in Luvaas’s telling phrase, and the British army was to pay dearly, in South Africa twenty years later, for forgetting the lessons of Plevna and the Wilderness.⁵⁷

Railways

‘Prussian institutions, aided by railways and telegraphs, must revolutionize our ideas of armies.’⁵⁸ These words, written in the immediate aftermath of the succession of stunning victories which had brought German arms to the walls of Paris in three weeks in 1870, acknowledged the impact which fundamental changes in means of communication had made on nineteenth century warfare. The growth of railways in particular made it possible for vastly bigger armies to be assembled and moved rapidly to the seat of war, and to be supplied and supported once there. This was seen to be the key to military success. Since it depended upon meticulous planning and organisation ‘...strategic planning became geared to the timetable — above all, the railway time-table.’⁵⁹

Not surprisingly, given the perennial strategic problem dictated by the threat of simultaneous invasion from either side of their scattered domains, the Prussians were the first to pay serious attention to the military possibilities of the railways. Edwin Pratt, in his magisterial work on the subject, records ‘... that the construction of railways for strategic purposes was advocated in Germany as early as 1833’; he recounts in detail Prussian efforts to develop this new technology, and the resulting French apprehensions.⁶⁰

⁵⁷ Luvaas, J, ‘European Military Thought and Doctrine, 1870-1914’, ch.4 in Howard, Michael (ed.) *The Theory and Practice of War* (London, Cassell, 1965), 81. This chapter and ch.5 in the same volume, Brian Bond’s ‘Doctrine and Training in the British Cavalry, 1870-1914’, explain how the doctrine of the offensive recaptured the military imagination as the century wore on.

⁵⁸ Home, Robert, ‘Are we ready?’, *Macmillan’s*, vol.22, Oct. 1870, 402.

⁵⁹ Liddell Hart, BH, ‘Armed forces and the art of war: Armies’, ch. XII of *The New Cambridge Modern History*, vol.10 (CUP, 1960), 309.

⁶⁰ Pratt, Edwin A, *The Rise of Rail-Power in War and Conquest 1833-1914* (London, PS King and Son, 1915), ix and ch.2. Much of the material in this section has been derived from this excellent book. See also Carter, EF, *Railways in Wartime* (London, Frederick Muller, 1964), part of which covers the same ground without adding significantly to the earlier work.

The first practical demonstration of the contribution which the growing network of lines could make to warfare came in 1859, when the French and Austrians confronted each other in Northern Italy. Although detailed analysis revealed that the use made of the railways by both sides was disorganised in the extreme, the fact was that the French were able to move 75,966 men and 4,469 horses from Paris to the conflict area in ten days, instead of the sixty days which it would have taken on foot.⁶¹ This makes a significant contrast with the situation in the Crimea only five years previously. There, the outcome was crucially affected by the difficulty which the Russians encountered in reinforcing and supplying their army by road. Had they then possessed the network of railways which served their forces in 1877-8 the result might have been very different.⁶²

At Casteggio and Montebello reinforcements were introduced to the actual field of battle by train, and this led to some colourful eye-witness reporting in the papers.⁶³ It also quickly caught the attention of professional observers in Britain. In August W Bridges Adams, writing in the journal *Once a Week*, concluded that ‘... (w)ars cannot be carried on without railways’.⁶⁴ Archer Crowe emphasised the same message in an article on the campaign in the October edition of *The Edinburgh Review*, and Major Miller, RA, VC, reiterated it in the first of two lectures to RUSI in April 1861.⁶⁵

Adams clearly recognised the significance of what had been happening in Italy, but the motivation for his article was the challenge of a more immediate continental stimulus in the aftermath of the French victory — alarm at the prospect of a French invasion of Britain.

Supposing that some modern *Van Tromp* under French orders should sweep the Channel to land soldiers on our shores, what then would be our best course of defence? I am merely arguing this as a supposition, precisely as Prince Joinville did.⁶⁶

⁶¹ Pratt, *Rail-power*, 10.

⁶² Plate I in Greene, FV, *Report on the Russian Army and its Campaigns in Turkey in 1877-1878* (published 1879, reprinted at Nashville, The Battery Press, 1996), and Burnaby, Captain Frederick, ‘The practical instruction of staff officers in foreign armies’, *JRUSI*, vol. 16, 1872, 635-6.

⁶³ *The Times*, (report dated 21 May 1859), 28 May 1859, 9. *ILN*, 28 May 1859, 507.

⁶⁴ Adams, W Bridges, ‘English railway artillery: a cheap defence against invasion’, *Once a Week*, vol. 1, 13 August 1859, 127.

⁶⁵ Crowe, J Archer, ‘The Italian campaign of 1859’, *Edinburgh Review*, vol. 110, Oct. 1859, 454-94. Miller, Major, RA, VC, ‘The Italian campaign of 1859’, *JRUSI*, vol. 5, 269-74.

⁶⁶ Adams, 127.

His solution was heavy artillery on railway wagons, which no invader would be able to match. The existing network of lines, he was confident, was suitable for the task. This was an important point, and would have a bearing on the extent to which European railway developments influenced British thinking. Britain, after all, had pioneered the development of commercial railways, and the first recorded movement of a body of troops by rail took place on the Liverpool and Manchester Railway in 1830.⁶⁷ Similarly, the first military railway in the field was built by the British in the Crimea. Accordingly, British opinion was confident that it had little to learn from others in the way of railway technology.

Organisation was another matter. The years following 1859 produced growing evidence of the decisive rôle which the management of railways would play in determining who won and who lost when war broke out. The reporting of the American Civil War and the wars of 1866 and 1870 made much of the railways, and once again eye-witness reports have left lasting records of dramatic interventions on the battlefield, epitomised by the arrival of Johnstone's Shenandoah army by train at the decisive moment of the first battle of Bull Run.⁶⁸

These successes were duly noted by professional soldiers. Captain WH Tyler, RE, lecturing at RUSI on 'Railways strategically considered' in May 1864, quoted extensively from *The Times* in describing Montebello and Magenta in 1859, and used American newspaper reports to illustrate the tactical value of the railways at both battles of Bull Run.⁶⁹ Similarly, Hamley acknowledged that '.... at the battle of Bull Run, the defeat of the Northern army was mainly accomplished by the attack of a brigade brought on the field by railway from the Shenandoah valley'.⁷⁰ However, the professionals did not allow themselves to be carried away by what they saw as exceptional circumstances. Hamley registered an immediate *caveat*; 'the success of such comparatively minor operations does not throw doubt

⁶⁷ Pratt, 1.

⁶⁸ Catton, Bruce, *This Hallowed Ground* (New York, Washington Square Books, 1961), 57.

⁶⁹ Tyler, Captain WH, RE, 'Railways strategically considered', *JRUSI*, 8, 1864, 326-43.

⁷⁰ Hamley, *Operations of War*, 26.

on the principle that railways afford an extremely precarious reliance when within reach of the enemy's enterprises.'⁷¹

This was to be the recurring theme of the soldiers; railways were revolutionising strategy, but were vulnerable and unreliable when near the field of battle. Tyler had noted these drawbacks in 1864, while enumerating the seven general lessons which the use of railways was teaching.⁷² Charles Chesney, writing on 'Recent changes in the art of war' in January 1866, dwelt on the strategic implications of railway development, but denied that the decision on the field at Montebello had been influenced by rail-born reinforcements and asserted that '....the long annals of the American war give no reason to believe that we are near the day when commanders will arrange their order of battle with a view to bring their troops under fire by train'.⁷³ On the other hand, Captain Hozier, reporting on the use of railways in the Franco-German war, noted that during the battle of Woerth the French were '.... constantly reinforced during the day by detachments brought up by railway'.⁷⁴ However, the message which the British army accepted was the cautious one, and Lieut.-Colonel Robert Home reiterated the theme in a lecture at RUSI in 1875; '....the railway becomes for the movement of troops of little value; but for the purpose of supplying troops, and removing sick and wounded, its value is at all times very great.'⁷⁵

The success of the German use of railways in the war was neither overlooked nor denigrated; Home went on to describe in admiring tones the German mobilisation plan, which was updated annually and distributed to 'every officer of certain grades', as a veritable Bradshaw.⁷⁶ There was no mystery about this, he said; it was simply a matter of attention to detail; and he gave, as an example of how it could work in practice, a hypothetical plan for an English invasion of Scotland. However, he was '.... far from advocating that we should

⁷¹ Ibid.

⁷² Tyler, 329, 332.

⁷³ Chesney, CC, 'Recent changes in the art of war', *Edinburgh Review*, 123, Jan. 1866, 126.

⁷⁴ *Extracts from the Reports of the Military Attachés who accompanied the French and Prussian Armies during the Campaign of 1870-71*, (London, Harrison, 1871). PRO WO 147/23, 29.

⁷⁵ Home, Lieut.-Colonel R, 'On the organization of the communications of an army, including railways', *JRUSI*, 19, 1875, 391.

⁷⁶ Ibid, 393.

adopt German customs in this country. But it is well to see what German customs are, and how the Germans have worked out the problem of utilizing their railways'.⁷⁷

Why was this? If thoughtful soldiers like Home, and others who will be mentioned below, saw so much to admire in German railway management, why did they not press for a similar national structure in Britain? It was certainly not through lack of understanding of how other countries were dealing with the development. A series of lectures and debates during the years following the Austro-Prussian War make it clear that the leaders of thought within the military establishment were kept regularly informed about the significance of what was happening on the continent. Major Noott, in a comprehensive analysis of Britain's defences in the immediate aftermath of the 1866 war, stressed that a '.... war in England would be carried on principally on railways', and commented admiringly on Prussian practice.⁷⁸ An unidentified contributor to the *United Service Magazine* developed the theme in two short articles in 1869 and 1871, describing Prussian and Austrian systems, referring to the proceedings of a French conference on managing railways in war, and rehearsing the history of their use in previous wars.⁷⁹ In 1872 Captain Burnaby's lecture at RUSI gave a similar *tour d'horizon*, and the Director of Public Works added his voice to the discussion in an unsigned contribution to the *Edinburgh Review*.⁸⁰ The following year there was another lecture and debate at RUSI which summed up all the previous discussion.⁸¹ In it Luard once more ran over the history of railways in war, taking particular note of the contrast between the general success of the German organisation and the failures of the French, and of the strenuous efforts being made by the latter to remedy the defects in their system.

I cannot do better than recommend those interested in the subject to peruse the 'lessons' learned by Colonel Jacqmin, from his experience in the working of the railways in this war, reviewing, as he does in his able work, their ministration on both sides.⁸²

⁷⁷ Ibid.

⁷⁸ Noott, Major FW, 'Home Defences', *Macmillan's*, vol.15, Feb. 1867, 290.

⁷⁹ 'The railway and the telegraph in military operations', *United Service Magazine*, 1869, part 3, 555-65, and 1871, part 3, 1-5.

⁸⁰ Burnaby, Captain FG, 'The practical instruction of staff officers in foreign armies', 8 July 1872, *JRUSI*, vol.16, 633-44. Galton, Douglas, 'Railway organisation in the late war', *Edinburgh Review*, vol. 125, January, 1872, 149-65.

⁸¹ Luard, CE, 'Field railways, and their general application in war', 12 May 1873, *JRUSI*, vol. 17, 693-724.

⁸² Ibid, 701.

Evidence that such lessons were duly perused can be seen in a note which Wolseley wrote in the margin of a translation by Charles Brackenbury of a French report referring to the inadvisability of allowing soldiers to travel on trains without supervision. 'See Jacqmin on the Railway service during the war of 1870.'⁸³

Luard also stressed, crucially, that Britain had much to learn from the American experience in the civil war about '.... the management and application of railways'.⁸⁴ This was the key point. Other continental powers were wisely doing their best to copy the successful German system, but the correct lesson for the British was in the general approach, not the specifics; the need to be prepared, to have an organisation in place in peacetime, and above all to practise moving large bodies of troops.⁸⁵

When it came to the details of the organisation, however, the American model was much more to the point, and there was general agreement about the reasons. First and foremost, Britain was a democracy. Prussia/Germany, on the contrary, was an authoritarian state in which national security dictated that the railway system, like every other institution, must be devoted to this service, and the state structure was such that there were no obstacles powerful enough to inhibit it. Other continental states had little option but to try to match this single-minded approach if they hoped to survive the German challenge. The British case was different. National institutions like the railways existed for the benefit of the country in general (whether in practice this meant the landed interest, business or the public at large was not always clear), which would not tolerate their subordination to the requirements of the army unless there was a recognisable emergency. Secondly, the strategic conditions were different. Home's scenario of an English invasion of Scotland was designedly a ludicrous one, because the continental situation simply did not apply on the British side of the channel. Should there be a threat of invasion the domestic rail network already fulfilled the main requirements for national defence, but '.... our last wars have been expeditionary wars, and

⁸³ Brackenbury, Major CB, RA, DAAG (tr.), Report of the Committee on army re-organization upon the Bill for the general organization of the French army. PRO WO 147/15, 42.

⁸⁴ Luard, 694.

⁸⁵ Noott, 290. Luard, 704.

the probabilities are in favour of such wars being those in which we are most liable to indulge in at present'.⁸⁶

Accordingly, all that was needed in Britain was the establishment of a military railway department, which could co-ordinate the efficient movement of troops when required, and legislation to permit the army to take control of the lines in a national emergency, as demonstrated by the Federal government during the Civil War. As the Americans had shown, there was no need for the army to have any closer control under normal circumstances, and in any case the main concern of the regular forces would be to deliver and maintain an expeditionary force overseas, so it was quite appropriate that the connection between the management of the lines and the army should be through the enrolment of suitable members of the staff of the railway companies into the Volunteers. This attitude did not escape criticism at the time; The *Daily News* of 23 April 1867 commented that '.... the authorities of the regular service ignore the existence of railways as if they were still manoeuvring under Marlborough';⁸⁷ but the recurrence of the theme in the lectures and debates of the period shows that the issue was by no means ignored by the army leadership or the government.⁸⁸ A paper for RUSI ten years later repeated the general view of informed opinion in the army, that the American model was more appropriate for Britain than any other, but (the point made so often by thinking soldiers) that what she *must* learn from Germany was the necessity of having the mechanism for mobilising ready for war at all times.⁸⁹

The regular army, in fact, remained satisfied that the strategic purpose of the railway system was simply to get an expeditionary force to the ports. Thereafter, transporting them to, and maintaining them in, the scene of action was a matter of shipping rather than railways, and, despite certain adverse experiences in the Crimean campaign, there was a

⁸⁶ Luard, 707.

⁸⁷ Cited by HS Wilson, 'The British army and public opinion', unpublished B Litt thesis (Oxford, 1954), 203.

⁸⁸ Galton's article, cited earlier, has particular significance here. A half-pay Captain, RE, he was at this time Director of Public Works, and something of an expert on railways, having served on the original Railway Commission in 1847 and visited the United States with Robert Lowe to study their railroad system in 1856. Because the article is unsigned, he was able to praise De Grey (Ripon) for establishing the Engineer and Railway Volunteer Staff Corps in 1865 without having to acknowledge his own hand in the matter, as Assistant Permanent Under-Secretary for War at the time.

generally well-founded confidence that the navy was good at that — while, as James Grierson pointed out with pardonable glee some years later, the Germans were not.⁹⁰ Later events seem to have justified this confidence. If, when major expeditionary forces had to be deployed, difficulties arose — as they did in the early stages of the Second Boer War, for instance — the problems were caused by the lack of adequate stocks of military stores and horses rather than from failures by the domestic railways or the ships.

Of course, once an expeditionary force had been established ashore, it would need local railways, and these would often be non-existent. While they had more experience of building military railways for themselves than any of the continental armies, they had learnt that the practical difficulties of doing so under the pressure of campaign conditions were intense, and what they had seen of even German performance in the continental wars had not changed their thinking. ‘In the Franco-German War what short lines were made were neither so speedily constructed nor so successful in result as to encourage the idea that lines of any length could be made during a campaign.’⁹¹ Russian achievements in their campaigns against Turkey in 1877-8 caused this judgment to be reappraised. Captain Sale of the Royal Engineers told a RUSI audience in 1880 that Poliakoff’s achievement in building a tactical railway in four months ‘.... offers a striking example of what can be done by energy and liberal expenditure, when free of administrative entanglements, and marks a distinct step in the application of science to warfare’.⁹²

As Pratt points out, these lessons were taken to heart by the army, particularly in India, in the immediate aftermath, and the British army continued to maintain a level of expertise in this particular technology which was not surpassed by any of its rivals.⁹³

⁸⁹ Rawson, Lieut. HE, RE, ‘The German Railway Regiment’, *JRUSI*, vol.20, 1877, 738-60.

⁹⁰ Macdiarmid, DS, *The Life of Lieut.-General Sir James Moncrieff Grierson, KCB, CVO, CMG, ADC* (London, Constable, 1923), 167-8 and 174.

⁹¹ Sale, Captain MT, RE, ‘The construction of military railways during the Russo-Turkish War of 1877-78’, *JRUSI*, vol. 24, 1880, 174-80, 175.

⁹² *Ibid*, 180.

⁹³ Pratt, chs. 15 and 16, and Appendix (particularly, pp 358-60).

Telegraphs and Signals

Compared with other European armies, parts of the British army of the 1850s were unusually sophisticated in the use of visual signalling in the field. The techniques, based mainly on flags, but also embracing heliographs when conditions were suitable, had been developed by individual units under the harsh pressure of circumstances on the North-West frontier of India. In those rocky hills and deep valleys a military column could only move safely if it had secured the high ground on its flanks, and it was vital for the survival of all that communications between the main body and the outlying pickets should be accurate and immediate.⁹⁴

Unfortunately, most of the British forces which went to the Crimea in 1854, and their leaders, had not benefited from that experience, and communication between commanders and troops depended, as before, on messages carried by hand, with all the risks of delay and inaccuracy — poignantly illustrated by the misdirected charge of the Light Brigade at Balaclava — which that entailed. On the face of it, this tends to bear out the thesis that the army in the Crimea continued to live in the past and had learnt nothing since Waterloo, but such a judgment would in this instance be unfair. The possibilities offered by the electric telegraph had been noted, and an operational innovation planned. Sir Vivian Majendie has recorded that

(t)he first designated application of military telegraphic communication to the use of an English army in the field was in 1854, when an equipment was sent to the Crimea to accompany the army in its field movements. The equipment was, however, not applied to this purpose, for the simple reason that there were no field movements worthy of the name; but it was employed for the establishment of a permanent communication between the British Headquarters and our base of operations.⁹⁵

During the Indian Mutiny, the Governor-General and the Commander-in-Chief were able to keep in touch by the same means, and it seems that the techniques had already

⁹⁴ Stotherd, Captain RH, RE, 'Military telegraphy and signalling', *JRUSI*, vol. 14, 1871, 331. See also Major-General HH Clifford's Report on Heliographs in Natal in 1879, 5, that only soldiers with Indian experience knew how to use them. PRO WO 147/53.

⁹⁵ Majendie, VD, 'Military signalling and telegraphy', *Cornhill*, vol.19, June 1869, 745.

improved. 'This was probably the first occasion on which telegraphy was employed on any large and useful scale with an Army in movement.'⁹⁶

At the beginning of the period with which this study is directly concerned, the antagonists in 1859 were no further forward. There was a telegraph network which permitted communication between the commanders of the armies and their bases at home, but the lessons from that were of more significance for the politicians than the soldiers, a point which was made in an article on 'The national defences' in *Fraser's Magazine* in December 1859, emphasising the advantage in co-ordinating their movements which this gave to a potential invader.⁹⁷ The outbreak of the civil war in America two years later created an entirely new situation, and this did have an impact on the thinking of the British army. The great distances and difficult terrain over which the war was fought focused attention on the problems of communication. It was observed that the railways were accompanied by a similar network of telegraph lines and that these were being put to good use by the contending armies. In his lecture on the strategic use of railways in May 1864 Captain Tyler drew attention to the importance of this.

The railways and rivers in America have been, in consequence of the distances to be traversed, and the indifferent character of the roads, of paramount importance in a military point of view; and the telegraph wire has partly superceded, for similar reasons, other means of transmitting orders⁹⁸

Majendie, writing five years later, made the same point, but took care to record that, though the British army should learn from the Americans, its own experience had already contributed to the development of the technology, particularly where communicating on the field of battle was concerned.

It seems, however, to have been reserved for the Americans to develop (sic), under the pressure of their desperate struggle, a complete telegraphic communication. Then, also, for the first time, if we are not mistaken, a recognized system of signals was extensively employed in the field; although it is fair to notice that the system had been already designed in England, and brought under the notice of our Government (in 1861) by Major Bolton, late of the 12th Regiment, to whose persistent exertions, in conjunction with Captain Colomb, RN, we are mainly indebted for the present official

⁹⁶ Ibid, 746.

⁹⁷ Addison, JE, *Fraser's*, vol. 60, Dec. 1859, 645.

⁹⁸ Tyler, 332.

recognition of the importance of the subject, and its reduction to an established system.⁹⁹

American experience had clearly made an impression on the British establishment. In September 1864 Earl de Grey, the Secretary for War, decided ‘.... to refer the whole question of army signals and telegraphy for the consideration of a Committee’, with Sir John Burgoyne in the chair.¹⁰⁰ Their deliberations depended heavily on a report and descriptive letter on the American signal corps submitted by Lieutenant Sir Arthur Mackworth, RE, following his visit to the Federal army that year, and the Committee’s report of 21 December 1865 included recommendations for the appointment of a permanent superintendent of army telegraphs and signals, as well as the establishment of a telegraph detachment of Royal Engineers at Aldershot, very much after the American model.

Before these proposals could be acted upon, events in Europe brought the focus of attention back across the Atlantic. The Austro-Prussian War showed that the Prussians in particular had grasped the importance of the new means of communication, and this gave British officers another practical demonstration to study. In October 1866 Charles Chesney wrote that ‘(t)he Prussian staff had diligently studied the lessons given by the American War in combining field operations, however distant, by means of the electric telegraph’, and that this had been a decisive factor in the success of their strategy.¹⁰¹ Captain CE Webber, RE, writing ‘Notes on the campaign in Bohemia in 1866’ in the *Professional Papers* of his corps, described the workings of the Prussian Field Telegraph in detail. He did not unreservedly admire everything about it (‘The store wagons proved too heavy’) but ‘(t)he efficiency of the Field Telegraph Department having contributed to the successes of the Prussian army, it is a proof that its organization was well arranged, and that the lessons to be learnt from it should not be thrown away’.¹⁰²

Action followed rapidly. On 16 January 1869 an Army Special Circular entitled ‘Army Telegraphy and Signalling’ gave the Royal Engineers superintendence of all Military

⁹⁹ Majendie, 746. The American viewpoint, taking due note of the British Crimean experiments, is outlined in Hagerman, Edward, *The American Civil War and the Origins of Modern Warfare* (Indiana UP, 1992) xii, 23 and 40-44.

¹⁰⁰ PRO WO 33/15/0268.

¹⁰¹ Chesney, CC, ‘The military growth of Prussia’, *Edinburgh Review*, Oct. 1866, 587.

¹⁰² Webber, Captain CE, RE, *PPRE*, vol. 16, 1868, 34-59, 39.

Telegraph Stations, directed that the School of Military Engineering should establish courses for officers and NCOs of all units of the army (who would then become instructors in their own units), designated a common flashing system for field service and ship-to-shore communication, and even provided for the transmission of private messages — for a fee paid in advance.¹⁰³

Professional interest continued at both unofficial and official levels. An article in the *United Service Magazine* in 1869 analysed French experiments in telegraphy at the camp at Châlons the previous year;¹⁰⁴ and General Sir William Codrington, who had been sent by the Adjutant-General to observe the manoeuvres of both the French and Prussian armies in 1869, reported in detail on their field telegraphs.¹⁰⁵ His conclusion was that it was doubtful whether the technology was yet sufficiently advanced for the transmission of orders on the battlefield, but that it was easy and practical to use it on the main lines of operation. He commended the French equipment and procedures as models. Charles Chesney reinforced these views in two articles in the *Edinburgh Review*, emphasising that telegraphy could destroy much of the fog of war, while converting countries like France and Prussia to ‘...one vast base for the conduct of warlike operations’.¹⁰⁶

Captain Stotherd’s lecture at RUSI on 13 May 1870, and the discussion which followed, provided the forum for a review of the whole subject.¹⁰⁷ Stotherd extolled the virtues of the Prussian system, as described by Captain Webber and reinforced by Captain S Anderson, RE, who had observed the Prussian field manoeuvres of 1869, noting, inevitably, that the Prussians would have benefited from a good visual system at the front, such as had been developed by the army in India. Major-General Sir Lintorn Simmons, who was in the chair, endorsed his words, and Simmons was an influential figure. Accordingly, steps were taken to provide the nucleus of a mechanism for the central management, as well as the

¹⁰³ PRO WO123/7, clause 21.

¹⁰⁴ Anon, ‘The railway and telegraph in military operations’, *USM*, 1869 part 3, 555-65.

¹⁰⁵ PRO 30/31/14.

¹⁰⁶ Chesney, CC, ‘The campaign of August, 1870’, *Edinburgh Review*, vol.132, Oct. 1870, 480-518, and ‘Studies of the recent war’, vol. 133, April 1871, 545-86.

¹⁰⁷ Stotherd, op cit.

training, of the skills involved. The Engineer branch of the War Office was given a Post Office company and a Telegraph troop, and the means for training appropriate personnel. This was certainly a step forward, but it is interesting to see that, in 1871, the newly titled Instructor in Telegraphy found himself responsible, not only for the training of telegraphy and signalling, but also for demolitions, submarine mining, photography, chemistry and (later) barrack plans, so there was little danger of the new skills absorbing a disproportionate share of the army's resources.¹⁰⁸

On the contrary; as so often, the principle had been accepted but the resources provided for its implementation were neither great enough nor focused enough to do the job thoroughly. As Lord Carnarvon, the Tory 'shadow' colonial secretary, observed in a wide-ranging criticism of the limited scope of the initial Cardwell reforms in October 1871, in comparison with the systems available on the continent '...the field telegraph, which has played so great a part in recent wars, exists only for a very limited force'.¹⁰⁹

Army officers continued to make the same point, usually as part of the general thesis that the greatest lesson to be learnt from continental, and specifically from Prussian, practice, was that effectiveness in war depended upon having a well-practised organisation in place in peace. Captain Burnaby included telegraphs in this category in a lecture at RUSI in 1872,¹¹⁰ and the very influential Lieutenant-Colonel Robert Home reiterated the message in the same place in 1875. 'Prussia conquered France, not so much from valour on the field of battle, as by the most painstaking care in every detail';¹¹¹ and the German telegraph system, organised from national level down to field detachments, exemplified this.¹¹²

The lesson was clear, but Carnarvon's point was the decisive one; expenditure for military purposes would only be provided for a very limited force. The technologies were

¹⁰⁸ Baker Brown, Lieutenant-Colonel W, *History of Submarine Mining in the British Army*, (Chatham, Royal Engineers Institute, 1910), chs. 1 and 2.

¹⁰⁹ Herbert, HHM, 'Army administration and government policy', *The Quarterly Review*, vol.131, Oct.1871, 528.

¹¹⁰ Burnaby, Captain Frederick G, 'The practical instruction of staff officers in foreign armies', *JRUSI*, vol.16, 1872, 633.

¹¹¹ Home, Lieutenant-Colonel R, 'On the organization of the communications of an army, including railways', *JRUSI*, vol.19, 1875, 389.

¹¹² *Ibid*, 390-1.

understood; the efficiency of having a national system which could be put at the disposal of the military at a stroke was accepted; but the political reality was that the nation would stomach neither the cost nor the disruptive threat involved in giving the military any pre-emptive rights to the communications network in time of peace.

Artillery

One of the dominant themes of the period was the extent to which the development of new industrial processes and materials inter-reacted with the practical requirements of soldiers, in a time dominated by threats of war. In this respect the artillery could well stand as a microcosm for the army as a whole, not least because of the way that the reactions of the soldiers concerned have since been represented.

The issues which this section will examine are those of technology, not tactical deployment, but two *caveats* must be immediately entered; first, that these two aspects cannot be entirely disentangled; second, that the technical details of the developments, in metallurgy, chemistry and mechanical engineering, will only be touched upon to the extent that they illustrate the problems with which the military had to deal, because space and time would not allow a more comprehensive presentation here — but acknowledging also the writer's lack of competence to grapple with the intricacies of the technologies involved.

There were four main issues affecting the development of artillery; what materials should be used in the construction of guns and carriages; whether the barrels should be smooth-bore or rifled; how developments in propellants and explosives should be exploited; and whether the guns should be muzzle- or breech-loading. In the eyes of many subsequent writers, this last issue was by far the most significant, and the stance adopted by the British military establishment on it has frequently been used to illustrate the common thesis that the Victorian army was dominated by pusillanimous reactionaries, ignorant of their profession, complacent, and unwilling to look at, far less learn from, foreign practice. The relevant volume of the *Oxford History* exemplifies this approach;

Cardwell regarded artillery as an arm in which the mechanistic nation should be relatively strong. His efforts here, however, were largely sterilized by the

conservatism of the ordnance officers; who actually insisted at this time on *going back* to muzzle-loading cannon, and thereby kept us behind the rest of Europe for a good part of twenty years. On the morrow of the Franco-Prussian war this was truly an astonishing folly;¹¹³

William McElwee, writing in 1974 (shortly after giving up the post of Head of the Modern Studies Department at Sandhurst), reiterates the message. ‘These innovations (the early introduction of breech-loading guns in the British army) were, of course, regarded at the War Office with grave mistrust.’¹¹⁴ The interjection ‘of course’ makes his position clear, as do other comments in the same book. For instance, to support his argument about the appalling deficiencies in the British service at the beginning of the Second Boer War, he significantly misquotes the statistics about the artillery available. ‘Yet, by 1881, there were only two breech-loading batteries left in the British army, both in India; and by 1890 there were none.’¹¹⁵ He cites Appendix C of volume one of Callwell and Headlam’s *History of the Royal Artillery* as his source for these figures, but what this appendix clearly records is that in 1890 the army at home included 32 field batteries of modern breech-loaders and 15 of muzzle-loaders, and in India 12 batteries of breech-loaders and 41 of muzzle-loaders.¹¹⁶

This section will look at what was actually being said and done at the time, and it will be contended that a very different picture emerges — of private industry being encouraged to work closely with professional soldiers to exploit advances in technology, of continuing experimentation, of anxious observation of what other armies were doing, of serious debate within the profession about the relative importance of conflicting service requirements, and of a clash of opinion, familiar to any who have witnessed the birth of radical new ideas, between the pragmatists and the visionaries. The fact that the Ordnance Department of the army was charged with the responsibility for developing and providing guns for the navy as well must not be overlooked. This had the advantage of concentrating the skills and experience of the two services in co-operation (and it must be a matter for regret that this pattern of working together was not accepted as a general model for the forces), but it did

¹¹³ Ensor, 15.

¹¹⁴ McElwee, William, *The Art of War: Waterloo to Mons*, (London, Weidenfeld and Nicolson, 1974), 125.

¹¹⁵ *Ibid*, 218.

¹¹⁶ This table, reproduced as illustration 1 on page 287, also shows that in 1899 (the year which McElwee is concerned with) every field battery in both parts of the army was equipped with breech-loaders.

increase the risk that too much effort would be devoted to trying to reconcile the irreconcilable in one gun — as, for instance, the navy's need to penetrate armour with the army's desire to inflict casualties in the open.

In 1859 all four issues were being actively explored, but the questions which particularly concerned the professionals were those relating to the materials to be used in making the guns, and the application of rifling to the barrels. In January there was a very technical lecture at RUSI, in which Captain Blakely, RA, explained that '.... every cannon foundry in the kingdom is busy making guns which in a year or two must be obsolete;',¹¹⁷ In order to take the strain imposed by more powerful propellant charges it was necessary to reinforce the vital parts, and he outlined his proposals for using steel or wound wire for this purpose, praising Armstrong for producing guns according to similar principles, and noting with approval experiments being carried out by 'Major Wade, of the US ordnance' and 'Colonel Treuille de Beaulieu, a distinguished French artillery officer'. For the next twenty years the experiments continued, and there was much debate about the most suitable metal for barrels. This was the time when the techniques for manufacturing steel were being refined, and Herr Krupp was beginning to persuade the armies of Europe that all-steel guns were the ultimate answer, but there were many technical problems in the early stages, and steel was still a much more expensive option. Blakely had spelt this out in 1859;

I am told that the introduction of steel for the manufacture of cannon renders my invention unnecessary. I am, however, inclined to believe that, the more valuable is the metal employed, the less John Bull will like to pay for its being so used that it cannot do an eighth of its work.¹¹⁸

The practical significance of this cost factor was illustrated by the professor of artillery at the RMA, Woolwich, in a paper for the RAI in 1867, showing the comparative costs of using different metals; cast-iron £21 per ton, Armstrong's built-up wrought-iron construction

¹¹⁷ 'An account of some experiments elucidating the theory on which the author founds his patented method of manufacturing cannon; also of the endurance of some guns and other cylinders made to test the practical value of this method', 21 January 1859, *JRUSI*, vol.3, 1859, 1-17, 7.

¹¹⁸ *Ibid*, 7.

£87 (down from £100), Krupp's steel £170, and gun-metal £187.¹¹⁹ Accordingly, while the army in India continued to use the traditional bronze, the British army persevered with wrought-iron, but on the Armstrong, built-up, principle.¹²⁰ There was practical evidence to support this policy, since the merits of the material had been professionally noted by observers of the American Civil War; a copy of a letter written from Washington on 11 November 1861 by Colonel FM Eardley Wilmot, RA, spoke of seeing '(o)ne of the rifled 12 prs. of wrought iron most excellent. A cast iron 12 pr. having a wrought iron ring on the breech not much liked.'¹²¹

The material used to make the guns was mainly a matter for a handful of specialists, but the issue of rifling, affecting as it did both the range and accuracy of the weapon, concerned the whole army. James Fergusson, writing in April 1859, commented that the opinion that the increased range and accuracy of rifled muskets must drive the artillery off the battlefield took no account of the fact that the same improvement was about to take place with cannon; '.... there is no principle applicable to rifles which is not equally applicable to artillery.'¹²² He cited experiments carried out by General John Jacob many years previously to show that a well-made rifled gun could throw a projectile accurately over ten miles, and commented favourably on the performance of Armstrong's prototype rifled gun of 1854 in trials against the standard 9-pounder field gun.¹²³ While recognising that there was still much work to do before the technical problems were all solved, he stressed the importance of encouraging the civilian engineers to get on with it without hindrance. The many references to the work which was currently in hand, in the Quarterly Reports of the Ordnance Select Committee for that year, suggest that this advice was being heeded. Minute no.794, besides referring to Armstrong's 32-pounder (for naval service), describes the trials of rifled field guns at Shoeburyness; no.942 refers to Lancaster's oval-bored field guns; and no.1047 reports on

¹¹⁹ Owen, Major CH, 'The present state of the artillery question', *Proc RAI*, vol.5, 1867, 213-30, 219.

¹²⁰ Rogers, Colonel HCB, *Artillery Through the Ages*, (London, Military Book Society, 1971), ch. 8. Rogers records, citing Captain JF Owen, *Construction and Manufacture of Ordnance* (1877), that some bronze 12-pounders were issued to units in England but had all been withdrawn by 1877. Ch.8, 98.

¹²¹ Harpton Court Papers, 2931, 2. Photocopy in appendix B2.

¹²² 'Rifled guns and modern tactics', *Edinburgh Review*, vol. 109, April 1859, 526.

¹²³ *Ibid*, 529.

Whitworth's prototype rifled 6, 9 and 32- pounders.¹²⁴ It is significant that these reports include references to a work entitled *L'Etude Sur les Canons Rayés* by Captain Gillion of the Belgian artillery.

With hindsight, it seems that the merits of rifling, which had been demonstrated for the first time in battle on the field of Solferino,¹²⁵ must have been so clear that there could be no resistance to its general adoption. However, greater accuracy at longer range was not always the overriding requirement; reliability, endurance and ease of maintenance in action were sometimes more valuable in practice. Edward Hagerman says that technical problems with rifled guns made them unpopular with the armies in the American Civil War, and confirms that the smooth-bore 'Napoleon' 12-pounder continued to be the weapon preferred by artillery officers and field commanders throughout that war.¹²⁶ This choice was duly acknowledged in the British service, as Charles Chesney recorded at the time, noting one particular reason why this was so.

And so disappointing has been the experience of rifled guns in the closer fields of America, that General Grant, in very recently laying down the future organization of the United States artillery, has directed one half of his batteries to retain the simple smooth-bore howitzer known as the Napoleon gun¹²⁷

Here there is a hint of the perennial problem confronting the British army; the reconciliation of the needs of the soldiers defending the colonies with the needs of those who were concerned with the possibility of becoming involved with a European opponent. American experience in their 'closer fields' was particularly relevant to the former, because of the terrain in which they were required to fight, but the European armies were more impressed by the need to increase the range of the guns in their more open country. In the event, the 'continentalists' clearly won the argument, and only a year after Chesney's comment, the professor of artillery was confidently telling the RAI that '(i)t is now pretty

¹²⁴ 'Quarterly Reports of the Ordnance Select Committee, from January 1, 1858, to June 30, 1859', PRO WO 33/8, 193-430.

¹²⁵ Chesney, CC, 'Recent changes in the art of war', *Edinburgh Review*, vol.123, January 1866, 120.

¹²⁶ Hagerman, 22.

¹²⁷ Chesney, CC, 'Recent changes', 122.

generally acknowledged that rifled ordnance should be used in preference to SB guns for land service'.¹²⁸ He added, somewhat tartly, in what may well have been a riposte to a long article by the editor of the *Edinburgh Review* comparing the approaches of the main European powers to the question of rifling (which Chesney had also noted),¹²⁹ that

John Bull must learn patience, and not expect to re-model his artillery in a year or two; and he should also turn a deaf ear to the loud and positive declamations of amateurs, and trust all questions of armament to those who are educated for and spend their lives in the service.¹³⁰

The developments in ammunition, in their propellants, their explosive and killing power, and their fuze mechanisms, were so technically demanding that there was little opportunity for gifted amateurs to intervene. This study will not attempt to enter into the technical detail.¹³¹ What is significant here is the way that the professionals involved kept abreast of what was happening and what was required; the regular reporting of inventions and experiments to the Ordnance Department and, later, the Department of the Director of Artillery, duly published and circulated each quarter; the continuing contact at a personal level between the relevant soldiers and the civilians who were creating the new materials; and the vigorous attempts to find out what other armies were doing in this respect.

The quarterly 'Abstracts' provide a formidable (even overwhelming) mass of information to illustrate how this was being done, and the 'Abstracts' for the quarter ending 31 December 1876 are typical of their kind. The regular section devoted to Foreign Artillery includes a report on the quality of a fragment of case shot recovered from the French manoeuvres at Châlons by Colonel Reilly, a despatch from General Walker, the military attaché at Berlin, with answers to technical points about artillery trials which he had put to the German government, analysis of 'a specimen of a Prussian time fuze for shrapnel shell' supplied by the German military attaché in exchange for a British fuze, a report culled from

¹²⁸ Owen, CH, 223.

¹²⁹ Reeve, Henry, 'Rifled ordnance in England and France', *Edinburgh Review*, vol. 119, April 1864, 480-529. The reference in Chesney is in 'Recent changes', 97.

¹³⁰ Owen, CH, 230.

¹³¹ Maitland, Major Eardley, RA, 'A brief sketch of the present state of British gunnery', a lecture delivered at the RE Institute on 31 July 1877, gives an appropriately detailed exposition of these developments to that professional body. *PPRE*, 1877, 112-31.

the French *Revue d'Artillerie* about Russian experiments showing the greater penetrative power of steel shell tempered in oil, and an account by the military attaché at St. Petersburg of a fatal accident with a Russian naval gun.¹³² It is interesting to see how the military attachés were used to obtain such samples of materials. This seems to have been an important, if sometimes tiresome, part of their job; for example, two letters of Walker's to the Foreign Office in June 1869 show that he had been asked to collect and send samples of Prussian explosive powder for analysis, and that he ended up by carrying the parcel to England himself in HMS Minotaur.¹³³ On a subsequent occasion, he was relieved to receive a letter from Cardwell, saying that there was no need to get hold of a specimen of the Mitrailleuse at present, but that he *would* like '.... some definite information as to the construction and power of that weapon'.¹³⁴

It does appear that, in these aspects of technical progress, the Royal Artillery was taking care to keep abreast of the latest developments, and that there was, generally speaking, a consensus of opinion about the merits of the systems on offer. Notoriously, this was not the case where the issue of breech- or muzzle-loading was concerned. There was a fundamental difference of opinion about the balance of advantage between the two systems, which led the British service to follow a different path from that of its main rivals for most of this period, and provided much of the evidence which has since been used to pass condemnatory judgments on both the army and navy of the era. The issue therefore merits a rather more detailed examination.

Breech-loading systems had of course been tried out ever since the first introduction of firearms, but the problem of sealing the breech effectively enough to avoid either catastrophic accidents or, at best, a crucial diminution of power through leakage of gas, had proved insuperable. Accordingly, loading artillery from the muzzle became the only accepted method for armies, and this served well enough until (as Blakely had noted in the lecture

¹³² Abstracts of Proceedings of the Department of the Director of Artillery for the quarter ending 31 December 1876. PRO WO 33/31.

¹³³ Walker to FO, 14 and 24 June 1869. PRO FO 64/673.

¹³⁴ Cardwell to Walker, 6 January 1871. PRO FO 64/729.

quoted) the development of more accurate and longer-range rifled muskets began to drive the guns farther from the line of battle, which made it desirable to increase the range and accuracy of artillery in at least the same ratio. As with muskets, rifling provided the solution to the immediate problem, but charging a rifled muzzle-loading cannon was similarly slow, and the attraction of loading at the breech equally appealing.

There was the additional benefit, as with muskets, that a breech-loading system potentially reduced the exposure of the gunners involved to enemy fire. The first experiments with rifling of cannon, which were undertaken by Armstrong while the Crimean War was still in progress, therefore included tests of breech-loaders.¹³⁵ The results obtained by both Armstrong and Whitworth were considered to be impressive, and in 1859 the Royal Arsenal at Woolwich began to equip the army with breech-loading cannon.

The ballistic performance of these guns met with universal approval, but from the start there were questions about their reliability and endurance in the field. Fergusson's article in April 1859, while acknowledging that both the French and the Prussians were experimenting with the system, expressed reservations about the perfection of the breech mechanism;¹³⁶ and a brief reference to the American view, in Eardley Wilmot's letter previously quoted, suggests that this was not seen by them to be an important aspect of performance; 'breech-loading looked on with indifference.'¹³⁷ However, the experiments on the continent led to the rapid introduction of breech-loading big guns in the swiftly modernising French fleet, and added to the threat which this growing power posed to the Royal Navy — something which the editor of the *Edinburgh Review* felt it advisable to bring to the attention of the Secretary for War, his kinsman and predecessor at the *Review*, in a long private letter in April 1862.¹³⁸

The activities of their European opposite numbers were kept under regular review by means of annual tours abroad conducted by selected gunner officers, and the report of the tour in 1864, to Sweden, the Netherlands and Belgium, drew particular attention to the fact

¹³⁵ Rogers, ch.8, 93-6.

¹³⁶ Fergusson, 529-32.

¹³⁷ Harpton Court Papers 2931,2. See appendix B2.

¹³⁸ Reeve, Henry, to Sir George Lewis, 26 April 1862. Harpton Court Papers, C/2311.

that breech-loading field guns were now being generally introduced.¹³⁹ It is interesting, therefore, to contrast the assessment by these officers with what some of their colleagues were saying.

First, two influential theoreticians. Major Owen's paper to the Royal Artillery Institution in 1867 set out the advantages and disadvantages of the two systems, but expressed no strong preference, noting merely that '(t)he Prussians, like ourselves, employ BL guns for field service, the French, Americans, and others, ML guns'.¹⁴⁰ Henry Brackenbury, writing of field artillery in a general analysis of the military equipment of the Great Powers of Europe in 1867, said that, recognising that rifling was the vital factor, every Power was following its own line of development. While Prussia and Russia had already settled on the all-steel breech-loading system of Krupp, the French were wisely sticking with their bronze muzzle-loaders and the Austrians, after experiencing 'terrible drawbacks', had reverted to similar weapons. In his view, there was not much to choose between any of them as fire systems.¹⁴¹ He was, however, rather perturbed to note that a committee of British senior officers also favoured reverting to muzzle-loaders on the grounds of their greater simplicity and reliability, and was glad that the Commander-in-Chief was opposed to such a step, because of the additional disruption and expense which it would impose upon the Regiment.¹⁴² It is apparent that neither Owen nor Brackenbury considered that there was a need for the British army to rethink its approach on technical grounds.

However, as Brackenbury had recognised, other gunners were beginning to feel that there was a strong case for reverting to muzzle-loading. The pressure came mainly from officers in the field, who had been expressing reservations about the reliability of the breech-loaders from the beginning. A report written by Captain FS Stoney, RA (Captain Instructor, Royal Gun Factories) in 1868 sums up the situation clearly. As far back as 1863, he pointed out, the Armstrong and Whitworth Committee, set up to look at the various options, had

¹³⁹ Report of a professional tour by Officers of the Royal Artillery, to Sweden, the Netherlands and Belgium, in 1864. PRO WO33/15/0262.

¹⁴⁰ Owen, 219-20 and 224.

¹⁴¹ Brackenbury, H, 'The military armaments of the five Great Powers'. *St. Paul's*, vol.1, November 1867, 182-94.

¹⁴² *Ibid*, 187.

come to the conclusion that the Armstrong muzzle-loader was the best choice for field use as well as for heavy guns.¹⁴³

This startling conclusion led to further enquiry; a new committee, consisting of Sir R Dacres as president, and 12 experienced RA officers of high rank, as members, was appointed in 1866 specially to investigate the subject, and according to Lieut.-Col. Miller, Secretary, the actual terms of this committee's decision are, (*footnote*; see paper entitled 'The comparative advantages of breech-loading and muzzle-loading systems for Rifled Field Artillery', Proceedings RA Institution, Vol.V. p.312) 'that they be manufactured hereafter.'

The general reason for coming to this result is briefly summed up by Lieut.-Col. Miller as follows: — 'If we had to take immediate part in a European war we should bring into the field a delicate gun requiring constant care and a great variety of stores for its sole use; (*footnote omitted*) we should further be liable to the risk of the gun failing us at critical moments, but we should not have the satisfaction of getting any advantage in range, accuracy or rate of fire which would not equally be presented by a muzzle-loading system'.¹⁴⁴

While the debate continued no more breech-loaders were made,¹⁴⁵ and the December 1867 Report of the Director of Ordnance and the Proceedings of the Ordnance Select Committee for the first quarter of 1868 both record a determination to find a good muzzle-loader for field use.¹⁴⁶ Pressure from concerned professionals continued, and there was a powerful debate at RUSI in March 1870. Colonel Maxwell presented a paper explaining the reasons why the Indian army was adopting a muzzle-loading 9-pounder, and went into considerable detail about the situation in other countries. He disagreed that this was a retrograde step in terms of accuracy and range;

until the past year there existed, and perhaps exists still in the minds of many artillerymen, a somewhat ill-defined impression that a breech-loader *must* shoot better than a muzzle-loader. I, for one, hold that this is by no means the case.¹⁴⁷

In the debate which followed, Eardley Wilmot, now a general, added his weight to the argument;

¹⁴³ Stoney, FS, 'A brief historical sketch of our rifled ordnance from 1858 to 1868', *Proc RAI*, vol.6, 1868, 89-122.

¹⁴⁴ *Ibid*, 105-6.

¹⁴⁵ Rogers, 99.

¹⁴⁶ St. George, Major-General J, Third report of the Director of Ordnance, 1866-7, 5 December 1867, and Proceedings of the Ordnance Select Committee for first quarter of 1868, marginal note 2779, 227. Both in PRO WO 33/19.

¹⁴⁷ Maxwell, Col. HH, 'The field gun for India', *JRUSI*, vol. 14, 14 March 1870, 180.

I think the artillery has gone rather in the wrong direction; in seeking for a breech-loading gun for field artillery, they are seeking for a thing for which there is no necessity; not that there is an objection to breech-loading, as such, because if a heavy breech-loading gun could be found, it might be made a valuable weapon.¹⁴⁸

The build-up of professional objections to breech-loaders was now too strong to be gainsaid, and in the newly appointed Director of Artillery, Brigadier-General Adye, those who favoured a return to the old system found a powerful supporter, and one whose position enabled him to take action. It is therefore pertinent to ask the question; was he, in this respect (as Howard Bailes's comment noted in chapter 2 of this study suggests), a conservative, harking back to an outdated technology, or a practical soldier solving an operational problem? Colonel EM Lloyd, RE, in the *Dictionary of National Biography*, inadvertently adds strength to the 'conservative' judgment, in seeking to absolve Adye from the responsibility by misdating the reversion to muzzle-loaders by some eight years.

To his administration has been attributed the failure of the British artillery to keep pace in improvements with that of other countries. Adye was undoubtedly a firm believer in the wrought-iron muzzle-loader. But the reversion to muzzle-loading had taken place in 1863 before he came into office, and it was only after he had left office that improvements in gunpowder furnished irresistible arguments in favour of breech-loading.¹⁴⁹

Adye, naturally, felt that he had acted as a rational soldier. In his memoirs he describes the operational *and cost* disadvantages of the Armstrong guns, the build-up of opposition at committee level between 1865 and 1867, and the practical steps which he initiated to resolve the matter. In 1870 he had got hold of a German 9-pounder breech-loading gun, '.... and after a long series of trials the committee reported that the English gun was superior, not in simplicity, but in range and power, and in rapidity of fire'.¹⁵⁰ He proceeds, at some length, to describe the vigour with which he encouraged continuing experimentation, until further refinements in steel construction and propellants justified a return to breech-loading guns in 1881.¹⁵¹ While it would be difficult to contradict his contention that the reversion to the manufacture of muzzle-loaders in 1871 was made on practical grounds (and popular amongst

¹⁴⁸ Ibid, 202.

¹⁴⁹ *DNB Supplement*, vol. 1, 18-20.

¹⁵⁰ Adye, General Sir John, *Recollections of a Military Life*, (London, Smith, Elder, 1895), 286-7.

¹⁵¹ Ibid, 288-9.

active soldiers), there is evidence that it soon became apparent to some professional soldiers that the British army was falling behind its rivals because of its dilatoriness in absorbing the significance of the improvements in technology. This is illustrated by some comments written by Lieutenant-General Sir James Hills-Johnes in the frontispiece and some inside pages of the copy of Adye's memoirs in the National Library of Wales, and quoted in Appendix B2.

These comments deserve respect, but they were written in 1895. Back in 1871, when the manufacture of muzzle-loaders was resumed, the issue was still in dispute. So respected an expert as Majendie was still protesting that the foreign preference for breech-loaders was based on faulty information. He analysed in detail European trials involving British muzzle-loaders to demonstrate, rather persuasively, that the tests had been rigged and the evidence distorted in favour of Krupp steel breech-loaders. His conclusion was that Krupp guns, besides costing more than twice as much as their 'Woolwich' competitors, could still not stand up to heavy work; the British services should not hastily return again to breech-loading, and certainly not in response to the special pleading of those with a vested interest in promoting one particular system.¹⁵² On the other hand, Colonel HA Smythe, RA, who had seen the Prussian guns in action in the bombardment of Thionville and Metz, was extremely impressed;

I may perhaps here remark, without intruding any opinion on the general question of muzzle and breech-loading, that the working of *these* breech-loaders with this projectile and fuze, against this object, and at the rates here ordered, seemed nearly perfect; the ease of loading and security of the men could hardly be equalled, and the smoothness and clockwork regularity of the whole operation not easily surpassed.¹⁵³

And so the debate continued. In May 1873 Lieut.-Colonel Reilly, Adye's Assistant Director, issued the results of a detailed study of the French artillery, including their judgment of the British guns.¹⁵⁴ Their conclusion was comforting; '(t)he Woolwich Service

¹⁵² 'English guns and foreign critics', *Proc RAI*, vol. 7, 1871.

¹⁵³ 'Some observations amongst German armies during 1870', *Proc RAI*, vol.7, 1871, 192.

¹⁵⁴ *Report on the French Artillery, 1873* (London, HMSO, 1873), PRO WO147/15. Illustration 2 shows French technical drawings of British ML and BL field guns of 1873.

gun gives results which are not inferior to those of any other field gun actually in the Service in Europe'.¹⁵⁵ Reilly, clearly anxious to anticipate the objection that, nevertheless, the French had abandoned muzzle-loaders, was at pains to show that the British service was not entirely alone.

Though it must always be most interesting and instructive to follow the experiments in France and Germany, we should not be too ready to adopt their decisions as conclusive

It is often asserted that we stand alone in adhering to our muzzle-loading system of artillery — it may therefore be well to state that the very opposite is the truth, as the following nations have more or less followed the same method: — Norway, Denmark, Austria, Italy, Spain, Turkey, Greece, Egypt, Holland, Brazil, Peru, Chili (sic) and the Chinese Empire.¹⁵⁶

On 8 June 1874, an evening meeting was convened at RUSI to hear another paper on the subject, and an impressive number of soldiers and sailors assembled to contribute to a crucial discussion.¹⁵⁷ The paper, delivered by Major JP Morgan, RA, contained much technical analysis of the whole range of guns and projectiles, and drew particular attention to the dangerous unreliability of time-fuzed ammunition with breech-loaders; it was all very well for the Prussians, who were content with percussion fuzes, but the British army would always need guns which could fire air-bursting shrapnel. It then became apparent that, although he quoted Adye at length, to the effect that '.... the breech-loading system itself had broken down, not only as regards the ammunition but also as regards the guns', he was actually advocating an *improved* version, of his own invention, rather than the retention of muzzle-loading.¹⁵⁸ The debate which followed revealed that opinion was still very much divided, even amongst those who could claim expert knowledge. Colonel Chesney made the vital point that the requirements of field and naval artillery must be distinguished; in his experience, German army officers were '.... perfectly and entirely satisfied that breech-loading is the system' but that it did not follow that this was the case with naval ordnance, an opinion which was strongly endorsed by several of the naval officers present,

¹⁵⁵ Ibid, 38.

¹⁵⁶ Ibid, 139.

¹⁵⁷ 'Breech-loading and muzzle-loading for guns', 8 June 1874, *JRUSI*, vol. 18, 1875, 408-38.

¹⁵⁸ Ibid, 427.

citing Prussian and French experience as well as their own.¹⁵⁹ When the debate turned once again to field artillery, the greater reliability of the muzzle-loading system continued to be urged by Captain Owen and Major Stoney as the justification for making no change, and it was obvious that there was no support at all for Morgan's own proposal.¹⁶⁰

Three years later, informed opinion in the Royal Artillery was still of the same mind, but the wind of change was beginning to be felt. In July 1877 Major Maitland, in his lecture at the RE Institute, while illuminating the thesis that the past three years had witnessed '.... remarkable progress in the science of Artillery, not only in our own country, but among nearly all the continental nations', asserted that the new muzzle-loading 12-pounder being introduced into the British service was '.... by far the most powerful weapon in the world of its kind'.¹⁶¹ No doubt the graphs and tables which he presented supported his case, but the significance of the determination of most continental armies to continue with the improvement of their breech-loaders was now beginning to impress the army establishment, including Adye.

Director of Artillery, 16.8.77, forwards the following for record: ---
Foreign Office, 5.7.77, communicate despatch, no.29, from Her Majesty's Chargé d'Affaires at Dresden, who informs that the new German field guns are universally considered superior to any in Europe, the Austrian *Udatius* gun excepted, which some authorities are disposed to prefer to the German gun.

The question of muzzle *versus* breech-loaders is, he states, no longer considered an open one by continental critics, and as a consequence of this opinion, the English guns are classed as third rate by all foreign specialists.¹⁶²

From this time on the change in official opinion seems to have been swift and complete, as can be deduced from the pages of the service journals. In 1879 an essay was

¹⁵⁹ Ibid, 433. The observations of Captain Scott, RN, 435, and Admiral Ryder and Captain Selwyn, RN, 436, expose the flimsiness of Ensor's argument that '.... The artillery branch of the army was in the hands of reactionaries with a passion for muzzle-loaders, and they imposed their views on the navy at a time when naval ordnance elsewhere was progressing faster than military'. Ensor, 122.

¹⁶⁰ Ibid, 433-8.

¹⁶¹ Maitland, 113.

¹⁶² Abstracts of Proceedings of the Department of the Director of Artillery for the quarter ending 30 September 1877. PRO WO33/32, 265-6.

published in the *Proceedings of the RAI* enumerating all the advantages of breech-loading, with many tables and figures, and stressing that this was the way forward — and it is worthy of note that this essay was awarded the silver medal prize for the year.¹⁶³ The debate at RUSI about the influence of modern fire, which followed soon after, showed that the superiority of breech-loading was no longer seriously questioned; Charles Brackenbury's proposal of the adoption of gun-shields, as Captain James pointed out, only made sense with such weapons, '.... but as the path of artillery progress seems to lie in that direction, this is not a consideration which need deter us'.¹⁶⁴

It comes as no surprise, therefore, that Adye was now, as he claimed, pushing vigorously for their reintroduction by the Royal Artillery, and that this process began a year later. Was this decade, then, a dreadful aberration on the part of a smug and ignorant military hierarchy? When the sequence of events is reviewed in retrospect, it is understandable that the Hills-Johnes opinion (that Adye and his like were somewhat slow to respond to the march of technical progress) has found its supporters, but two points stand out clearly, and it is not difficult to infer a third.

First, the acknowledged and serious drawbacks of the early breech-loaders were rightly regarded as too serious to risk, by men who would generally have to fight a long way from help, under conditions where absolute reliability was truly a matter of life and death. The artillery equipment immediately available for the British army must, therefore, meet this requirement. Second, the leading figures involved, far from being ignorant of, or indifferent to, what was happening elsewhere, took pains to ensure that they were kept informed and that the process of reappraisal was continuous, if cautious. Third, the question of comparative cost, which occurs with some regularity in all the discussions, goes a long way towards explaining why preserving a system which delivered 'more bangs to the buck' was judged to be a prudent

¹⁶³ Elles, Captain ER, RA, 'On the question whether any development of the material of Field Artillery is necessitated by the general adoption of field entrenchments on the field of battle, and if so, on the direction such development should take', *Proc RAI*, vol.10, 1879, 558-76.

¹⁶⁴ James, Captain Walter H, RE, 'Modern fire: Its influence on armament, training and tactics', 7 May 1880, *JRUSI*, vol.24, 378-403, 388. Illustration 3 is a French sketch of the Armstrong 12 pounder BL gun of 1880.

ay of both currying favour with the government (as Hills-Johnes put it) and maximising the amount of money available for other military priorities. In a democratic society such considerations are usually practical necessities, and if the military leadership of the time took this course they can scarcely be condemned for it.

Machine guns

As with many other technologies, the development of machine guns passed through three main phases; first, the exploration of the initial idea, at a time before the prevailing level of other technologies was sufficient to support it; later efforts, once the basic technologies had become available, to turn this concept to practical use, involving the pursuit of alternative and competing solutions; finally, agreement on one preferred method, and the rapid exploitation of the resulting tool. In the case of machine guns, the first phase long preceded the period of this study, and the third immediately followed it, so the concern of this section will be mainly with the intermediate phase.

There are accounts of guns which could fire many shots at the same time, or in rapid sequence, as far back as the fourteenth century.¹⁶⁵ The problem was that, until the development of integral ammunition and secure breech mechanisms, the results achieved by these weapons did not justify their wide deployment, and even such a splendid idea as James Puckle's machine gun of 1717 simply provided a little passing amusement.¹⁶⁶

By 1859 both the main problems were in the process of being solved. Respectable integrated ammunition and acceptable, if by no means perfect, breech mechanisms were available. The outbreak of the American Civil War, which led to rapid improvement in both these areas, encouraged the American engineer RJ Gatling to devise a range of manually operated, multi-barrelled, rapid-firing guns, and a handful were used in action before the end

¹⁶⁵ Reid, William, *The Lore of Arms* (London, Arrow Books, 1984), ch. 7, 65. There is a fascinating picture of one such *Orgelgeschütz* of the early 16th. c. on page 68, which looks not unlike a World War II Russian rocket launcher.

¹⁶⁶ Reid, 145.

of the war.¹⁶⁷ British observers were able to watch tests of the new weapon, but reported unfavourably, to the General Commanding in Canada, on its power and its durability.¹⁶⁸ On the other hand, and crucially, a Swiss observer was impressed; his account was quickly published in Europe, and (as it turned out) the French army took due note.¹⁶⁹

So far as the British service is concerned, if the Proceedings of the Ordnance Select Committee for the Quarter ending 31 March 1867 are to be believed, the army at home never saw Mahon's report. At all events, minute 20,873, 'The Gatling Battery', referred to a letter from Sir F Bruce at Washington, dated 25 December 1866, containing a newspaper account of 'a new firearm called the Gatling battery gun', and said that no steps should be taken until this report had been confirmed.¹⁷⁰ This soon followed, and their reaction was swift. Minute 21,200 of 18 February 1867 showed that they were obtaining a gun and ammunition from the London agents, and the report of its trial at Shoeburyness was available on 13 March. Unfortunately, this gave conclusions similar to those which Mahon had relayed to General Williams; the gun was generally inferior in effect to equivalent field guns and too heavy to justify its expense, except possibly for some static defensive works. In any case, the agent wanted to withdraw the gun until he could replace it with an improved model.¹⁷¹ For the time being that was that.

However, some forward-looking soldiers were showing greater interest, particularly because there were now signs of progress on the continent. Henry Brackenbury had been asked to contribute an account of the state of the armies of the major European Powers to the first volume of the new *St. Paul's* magazine, which appeared in November 1867. In it he introduced the topic of the *Mitrailleuse*, admitting that he was relying on rumours of '.... these mysterious pieces, to be worked by turning a handle, which it is said can keep up a continuous shower of rifle bullets These are probably constructed somewhat on the plan

¹⁶⁷ Gatling, RJ, 'Machine guns: the "Gatling Battery" — the Agar and Claxton guns — the French and Montigny Mitrailleurs', *JRUSI*, vol. 14, 1870, 509.

¹⁶⁸ Mahon, Captain Thomas, RA, report to Lieutenant-General Sir WF Williams, 1 August 1862; cited by Luvaas, *Legacy*, 25.

¹⁶⁹ Luvaas, *Legacy*, 90.

¹⁷⁰ Abstracts of Proceedings of the Ordnance Select Committee, for the quarter ending 31st. March 1867, 233. PRO WO 33/18.

¹⁷¹ *Ibid*, 233-5.

of the American Gatling gun.’¹⁷² Major GV Fosbery, VC, elaborated on this theme in volume 13 of *JRUSI* shortly thereafter, contrasting the merits of the *Mitrailleuse* with the defects of the Gatling, and this provoked a furious rejoinder from Gatling himself in volume 14.¹⁷³ In this he gave all the reasons why his range of guns was superior to its rivals, and argued with some conviction that the French had plagiarised his ideas, ending with a prescient vision of a time when machine guns would play a decisive role on the battlefield.¹⁷⁴

Meanwhile, his agent had been working to convince the British establishment of the Gatling’s merits. In February 1869 the Director-General of Ordnance noted that *Mitrailleurs* were under serious consideration, if they had not actually been obtained, by the governments of Russia and Prussia, as well as Belgium and France; that he had received news from the Gatling agent that in tests in Munich their guns had scored ‘a decisive triumph’ over all the competition, and that the latter now solicited an order from the British government.¹⁷⁵ A sample Montigny *Mitrailleuse* had already been ordered, and consent was given to buy a Gatling.¹⁷⁶

The war of 1870 now provided an arena in which the *Mitrailleuse* could be seen in action, and the general agreement amongst observers was that the results were disappointing. To a large extent this was the result of faulty tactical deployment, but fundamental criticisms were still being made of the concept itself. These are admirably set out in the long memorandum which the Topographical and Statistical Department of the War Office circulated in 1871, summarising the reports of the military attachés during the campaign. Many instances were given of Colonel Walker and Captain Hozier reporting, from their own observation and from the evidence of Prussian and Bavarian officers, that such weapons were not effective under most conditions.

¹⁷² Brackenbury, H, ‘The military armaments of the five Great Powers’, *St. Paul’s*, vol.1, November 1867, 193-4. For a description and illustration of the *Mitrailleuse* see Reid, 217.

¹⁷³ Fosbery, Major GV, ‘On mitrailleurs, and their place in the wars of the future’, *JRUSI*, vol.13, 1870, 539-63. Gatling, op cit.

¹⁷⁴ Gatling, 528. The Montigny Mitrailleuse and the Gatling can be compared in illustrations 4 and 5.

¹⁷⁵ Abstracts of Proceedings of the Ordnance Select Committee, for the quarter ending 30th. June 1869, Minute 26,851, 14.4.1869. PRO WO 33/20.

¹⁷⁶ Ibid, Minute 26,848.

On the whole, to judge from the general tone of the despatches of the Military Attachés and the opinions expressed in the German Military Press it would seem that the mitrailleuse, although generally recognized as a powerful auxiliary for the flank defence of fortifications, and in other exceptional cases, is of no great value in the field.¹⁷⁷

This served to confirm, on good authority, the established opinion within the British military hierarchy (the ‘pragmatists’), but the ‘visionaries’ still had their voice. Colonel HA Smyth, RA, who had also seen the Prussians in action during the war, claimed that some officers were impressed by the effect of the *Mitrailleuse*, and would have liked to have them as battalion guns.¹⁷⁸ Captain Fox Strangways, RHA, in a lecture at Aldershot in March 1872, could see a use for them in reinforcing the assault. ‘A few mitrailleuses, crammed up with the infantry, might be at hand at once, and exercise a powerful effect in supporting their lodgment, and in preventing the retiring enemy from reforming.’¹⁷⁹

To their credit, the Ordnance establishment, despite their reservations, continued to explore the qualities of the alternatives on offer. The Special Committee on Mitrailleurs sought and recorded the views of officers who had seen the European versions in action (including Walker, Reilly, both Brackenburys, Hozier and Fielding, as well as Colonel Conolly, now military attaché at Paris, but who had missed the fighting). Their differing opinions were set out in two reports at the end of 1871, and the final judgment was sufficiently equivocal to make it reasonable for Adye, the Director of Artillery, to maintain, in his annual report to the Surveyor-General of the Ordnance in February 1872, that

(t)hey may occasionally be useful in certain fixed defensive positions, but it seems doubtful whether exceptionally complicated weapons for purposes so rare should be maintained, They are, in my opinion, delicate feeble weapons and have but a narrow sphere of usefulness.¹⁸⁰

¹⁷⁷ Extracts from the reports of the Military Attachés who accompanied the French and Prussian armies during the campaign of 1870-71. (London, War Office, 1871). PRO WO 147/23, 26-7.

¹⁷⁸ Smyth, Colonel HA, RA, ‘Some observations amongst German armies during 1870,’ *Proc RAI*, vol.7, 1870, 200.

¹⁷⁹ Fox Strangways, Captain, RA, ‘The development of artillery tactics in combination with the other arms’, *Proc RAI*, vol.8, 1874, 154.

¹⁸⁰ Adye, Brigadier-General John, to Lieutenant-General the Right Hon. Sir HK Storks, GCB, Surveyor-General of the Ordnance, February 1872. PRO WO 33/24, 817. The reports of the Special Committee, of 28 November and 25 December 1871, are on pages 975-88 of that document.

Colonel Lumley Graham disagreed. In the translator's preface to his version of Boguslawski's *Tactical Deductions*, in 1874, he pointed out that, though the author was not impressed by *Mitrailleuses*, he (Graham) felt that they could be decisive weapons if properly used.¹⁸¹ This opinion was aired more forcefully at another vigorous debate at RUSI the following April. Captain E Rogers presented a paper on 'The Gatling gun; its place in tactics', in which he asserted that the 'open verdict' on machine guns in general had arisen because the system 'was not thoroughly understood' by those who had discussed it previously.¹⁸² Every significant continental army was now introducing them; whatever the experience of observers such as Walker, many German officers were in favour of their use, and he invoked the impressive name of von Moltke himself when quoting from the 'official work on the Franco-Prussian war' to support this claim.¹⁸³

This paper and the debate which followed were naturally mainly concerned with tactics, but they brought out the two connected issues which were to prove decisive in settling the future of the machine gun. The first was the question of the power-weight ratio. When deployed, they were as heavy and cumbersome as field guns, but, in the view of professionals like Captain Owen, Captain Nolan and Major Hale, had neither the range nor the hitting power to compete. The figures had been quoted regularly over the years and could hardly be gainsaid. The second was that they were still being thought of as artillery weapons, as either an adjunct or an alternative to the field guns. Rogers pointed out that this was a mistake, and he quoted at length from the report of the Swedo-Norwegian Committee on mitrailleurs on '.... the importance of not confounding mitrailleurs with artillery, as much on account of their effect as the proper nature of their employment'.¹⁸⁴

Improving the power-weight ratio would do much to promote this argument, that machine guns were potentially infantry rather than artillery weapons, but this was not an easy

¹⁸¹ Boguslawski, A von, *Tactical Deductions from the War of 1870-71*, tr. Colonel Lumley Graham, (London, HS King, 1872). Preface, XIX. It has to be noted that Boguslawski's views, based on his direct experience in the war, were trenchantly hostile towards these '.... very inferior engines of war'.⁸⁷, in the new edition (Minneapolis, Absinthe Press, 1996).

¹⁸² Rogers, Captain E, 'The Gatling gun; its place in tactics', 19 April 1875, *JRUSI*, vol. 19, 1875, 421.

¹⁸³ *Ibid*, 422.

¹⁸⁴ *Ibid*, 433.

matter with the existing types of equipment, and in December 1880, which marks the end of this period under study, yet another Second Progress Report of Committee on Machine Guns was still describing trials of many competing systems.¹⁸⁵ A handful of Gatlings and Nordenfeldts had, it is true, accompanied the expeditions in Africa and Afghanistan during the late 1870s and early 1880s, and Howard Bailes (a penetrating analyst of the impact of technology on the Victorian army) has shown that these experiences encouraged the enthusiasts to press for their wider use.¹⁸⁶ However, vindication of the caution of the Ordnance Department was at hand. In 1882 the American engineer Hiram Maxim, working in London, designed the first truly automatic weapon, making use of the power of the recoil to reload and fire the gun. This made it possible to reduce the weight and size dramatically, while enhancing the hitting power, and at last the army had a gun which it was practical to use at battalion level with the infantry in the field.¹⁸⁷

Small arms

A layman watching a parade of British infantry in 1859 would have been forgiven for thinking that the men were armed with weapons similar to those which their grandfathers had carried in the Peninsula fifty years before. The ponderous, large-bore, muzzle-loading Enfield rifles looked like the old 'Brown Bess' musket, though they were in fact a much better weapon, considerably improved in reliability, range and accuracy; but they still suffered from the faults common to all muzzle-loaders. They could only be loaded comfortably by someone standing and they were slow and complicated to load and fire. They had proved their worth when up against Russians equipped with smooth-bore muskets in the Crimea, and were regarded as the best military muzzle-loading rifle in current use, but it was already acknowledged by most of the military hierarchy that they should be replaced.¹⁸⁸ It

¹⁸⁵ Second Progress Report of Committee on Machine Guns, 9 December 1880. PRO WO 147/52.

¹⁸⁶ Bailes, Howard, 'Technology and tactics in the British army, 1866-1900', in Haycock, Ronald and Keith Neilson (eds.), *Men, Machines and War* (Wilfred Laurier University Press, 1988), 43. Reid, 217, shows a sketch of a Royal Artillery NCO firing a Nordenfeldt in c.1884.

¹⁸⁷ Reid, 227-8. Illustration 5 shows a French drawing of the first model of the Maxim.

¹⁸⁸ Anon., 'The creators of history', *United Service Magazine*, 1871, part 3, 7. Liddell Hart, BH, 'Armed forces and the art of war: armies', ch.12 of *The New Cambridge Modern History*, vol.10 (CUP, 1960). A lecture by Lt.-Col. Wilford at RUSI in July 1857 makes it clear that the rifled Enfield had not been issued to all British infantry in the Crimea, and that there was still some hostility to the idea that it should be. *JRUSI*, vol.1, 1857, 242-3.

needs to be recorded, however, that so thoughtful an observer of the American war as Colonel Denison was still maintaining that the long Enfield was ‘ without any exception the best of all rifles’ as late as 1868.¹⁸⁹

An inherently better system was available, since breech-loading rifles of several kinds had been tried out for many years; the Hall rifle, for instance, had been in use in the United States since 1817, and the more efficient Sharpe’s rifle since 1848.¹⁹⁰ Breech-loaders did away with the need for a ramrod, and they could be loaded while kneeling or lying down, but, until ammunition which incorporated its own ignition system was perfected, the necessity to use a separate percussion cap as the primer meant that the rate of fire was no better than that of the muzzle-loader. Inventors in several countries had been working for a good many years to overcome this problem, and solutions had been found. In 1828, Johann Nikolaus Dreyse developed an integral cartridge in which the fulminate primer was placed immediately behind the bullet, and a needle-shaped firing-pin pierced through the propellant explosive to ignite it. This needle gun was adopted by the Prussian army from 1848 onwards, and for the next few years they were the only large army to possess a breech-loading rifle.¹⁹¹

This development was duly noted in England. James Fergusson, evaluating the small-arms systems available in April 1859, recorded that ‘ as far back as 1848 the Prussian soldier could deliver three or four balls for one which any enemy could return’, but concluded that ‘ with the present drill and present mode of manoeuvring troops, its adoption would be a fatal mistake’ for the British army, because the ammunition would be used up so quickly.¹⁹² This was to be a continuing reservation whenever innovations to increase rapidity of fire were in question, as Charles Chesney observed in 1866.¹⁹³

¹⁸⁹ Denison, George T, *Modern Cavalry; Its Organisation, Armament and Employment in War*, (London, Thomas Bosworth, 1868), 53.

¹⁹⁰ Encyclopaedia Britannica, 1969, ‘Small Arms, military’, 671.

¹⁹¹ Reid, William, *The Lore of Arms*, 190.

¹⁹² ‘Rifled guns and modern tactics’, *Edinburgh Review*, vol.109, April 1859, 520,524.

¹⁹³ Chesney, C, ‘The military growth of Prussia’, 587-8.

The war in Italy in 1859 was fought with muzzle-loaders by all the participants, and the American Civil War began with both sides similarly armed.¹⁹⁴ This war inevitably stimulated rapid experimentation and innovation, and by 1865 many different systems of breech-loading rifles and carbines were in use. This provoked great interest on the European side of the Atlantic, and *The Times*, with characteristic confidence, began to insist that one of these, the Mont Storm rifle, should be adopted forthwith by the British army, because of ‘....its immeasurable superiority over all other weapons of the same kind’.¹⁹⁵

In 1864 there came the war over the Danish Duchies in Schleswig-Holstein, in which the needle gun was seen in serious action for the first time, and its success made some impact on professional observers; but it was two years later, when the Prussians unexpectedly overwhelmed the Austrian army in the Seven Weeks’ War, that the public at large began to understand just how decisive breech-loading rifles had become. This distinction between the professionals (in France as well as Britain) and the general public is significant, because it has created an erroneous idea in the minds of many subsequent writers about the alertness of the military establishment to the need for change. RJ Gatling contributed to the creation of the myth. In his *JRUSI* article in 1870, while complaining about the frustrations endured by all inventors, he declared that

(t)he inventors of breech-loaders will readily recall the many disappointments and rebuffs they met with from European Governments until the Prussians adopted them, and demonstrated their great superiority upon the battlefield of Königgrätz. Then, for the first time, the other European Governments saw the effectiveness of the breech-loader, and made haste to adopt it.¹⁹⁶

William Russell must share some of the blame. He had written in the most excited terms to Delane in July 1866 to get him to impress upon the British authorities that they must give the army a comparable weapon at once,¹⁹⁷ and the *Pall Mall Gazette* had commented that this was probably the first time that ministers had spoken of a civilian newspaper

¹⁹⁴ Hagerman, 308 n.31.

¹⁹⁵ *The Times*, 13 July 1861. Also 15 and 31 July 1862. See also *The Volunteer Service Gazette*, 25 July 1863. The merits of the Mont Storm are advanced in detail in Phelps, ‘Mont Storm’s System of breech-loading’, *JRUSI*, vol.8, 1864, 280.

¹⁹⁶ Gatling, 504.

¹⁹⁷ The text of this letter is in appendix B2.

correspondent as a person ‘....whose opinions were entitled to great weight’ in such a matter. Two biographers of Russell’s have fastened on to this; Atkins has already been cited, and Hankinson makes the same point; ‘He was instrumental, after *Königgrätz*, in bringing the importance of the “needle-gun” to public attention’.¹⁹⁸

Subsequent military historians seem to have accepted the truth of this. Both Hew Strachan and Edward Spiers have given further support at least to the general message that it was the 1866 war which brought home the significance of the breech-loader; Strachan says; ‘....not until *Königgrätz* in 1866 did the powers of Europe fully appreciate the qualities of the weapon’¹⁹⁹, and Spiers says; ‘Like the French, who introduced the *Chassepôt* — an even better weapon than the needle gun — in 1866, the British followed the Prussian example’.²⁰⁰ In saying so they are echoing words of Sir Michael Howard’s; ‘(o)nly then (in 1866) did the other Powers hasten to equip themselves with the breech-loaders whose patterns had been neglected for years on the shelves of their Ministries.’²⁰¹

This seriously underrates both the collection of military intelligence and the research activity which had already taken place. The British army, and ministers, were fully aware that Marshal MacMahon’s instructions to the French ‘General and Staff Officers serving at the Camp’ at Châlons in the summer of 1864 included detailed notice of the superiority of the needle gun over all muzzle-loading rifles.²⁰² In any case, appropriate action was already in hand. As Captain V D Majendie, RA, (later Sir Vivian Dering Majendie), who was then an assistant Superintendent at the Royal Laboratory, Woolwich, said at the time;

An impression that the English army owes the adoption of breech-loaders to the late German war, — that but for this remarkable campaign we might have continued to cherish an implicit belief in our muzzle-loading Enfields, until some *Skalicz*, or *Nachod*, or *Sadowa* of our own should have rudely destroyed it, is so prevalent and at the same time so inaccurate, that it is worth while to review briefly the history of the matter.²⁰³

¹⁹⁸ Hankinson, 269.

¹⁹⁹ Strachan, *European Armies*, 112.

²⁰⁰ Spiers, *Late Victorian Army*, 238

²⁰¹ Howard, *Franco-Prussian War*, 5.

²⁰² PRO WO33/15/0261, Camp at Chalons, 1864, Prepared at the Topographical and Statistical Department, and printed by order of the Secretary of State for War, 1865, 42.

²⁰³ Majendie, ‘Breech-loaders’, *Cornhill*, vol.14, (Sept. 1866), 342-57.

The fact was that that the army had been looking at breech-loading systems in great detail. Seven years previously, some cavalry regiments had been issued with breech-loading carbines.²⁰⁴ The needle gun had been examined and rejected, as being too inaccurate, too short in range, too slow to operate (‘...its rapidity of fire being not quite one half that of the Snider-Enfield’), too prone to damage and, because of the escape of gas from the breech, so inconvenient to the user ‘.... that the Prussian soldiers prefer to deliver their fire from the hip’.²⁰⁵ Majendie sums it up by saying;

It is with regret, therefore, that we have noticed the occasional advocacy in our papers of the adoption of the Prussian system. That such attempts must prove abortive, we need hardly state; but it still remains a ground for regret, when what is in reality a matter for congratulation and confidence is represented as a subject for apprehension and mistrust.²⁰⁶

What, then, had been happening? It was, he says, owing to ‘.... a gradual perception of its necessity which has grown up amongst us, and to the energy and anxious foresight of our military authorities’ that the right choice had been made. He describes how, in June 1864, Lord de Grey set up a special committee, chaired by Major-General David Russell, and including officers who had examined the matter with the US army, to consider whether the British army should now convert.²⁰⁷ The committee reported promptly, in July, that the infantry should convert wholly as soon as possible. Accordingly, the matter was referred to the standing Ordnance Select Committee, which proceeded to advertise for potential suppliers, on 23 August 1864, and to carry out exhaustive tests on the eight candidates which survived the initial examination, and of which samples were available.

²⁰⁴ See PRO WO33/7/043, Small Arms Committee. Report on Breech-loading cavalry carbines, 1859, for an encouraging series of tests on American and French models.

²⁰⁵ Ibid, 355-6. Majendie had taken the two phrases quoted from a hostile analysis of the quality of the needle gun on page 5 of the *Pall Mall Gazette* of 7 July 1866. The authoritative tone and accurate information of this article and a subsequent one on pages 9 and 10 of the 24 July 1866 edition make it clear that the *Pall Mall Gazette* knew what was in hand, even if *The Times* did not. Illustration 6 compares the actions of the needle gun, Snider-Enfield and Martini-Henry.

²⁰⁶ Ibid, 357.

²⁰⁷ Ibid, 344. See also Labbett, Peter, *British Small Arms and Ammunition 1864-1938*, (London, Labbett, 1993), 7-10.

Again, the report followed quickly. On 14 March 1865 they said that, while they were not completely satisfied with any model, they would recommend the Snider conversion of the existing Enfield if the ammunition could be improved. Curiously, the Secretary of State chose to ignore this recommendation and accept one of the rejected models. Perhaps remembering *The Times*'s advocacy, he placed provisional contracts for 3,000 Enfields to be converted on the Storm system, but the results were so poor that the project was rapidly abandoned and the problem was returned to the committee. By then, Colonel Boxer, the Superintendent of the Royal Laboratory, had produced a greatly improved cartridge for the Snider, which was now 30% more accurate than the muzzle-loader as well as firing four times faster. On 9 May 1866, the committee recommended that this system be adopted, and this was officially endorsed by the Secretary of State for War on 23 May.

Therefore, when William Russell wrote his letter on 9 July, the British army was already in the process of converting to the Snider breech-loading system, which did incorporate integral ammunition, and which was notably better in respect of range, accuracy, robustness, safety and speed of fire than the Prussian needle gun. All this was spelt out in Parliament. On 13 July 1866 Earl de Grey, now in opposition, asked the Earl of Longford, the new Assistant Secretary of State, what the position was; and three days later Captain Vivian raised similar questions with General Peel, the Secretary of State, in the Commons. The replies were basically the same. The process of conversion to the Snider system was proceeding fast; by the end of March 1867 200,000 of the total stock of 600,000 Enfields would have been converted, and at very reasonable cost. (It worked out at 12/- per rifle.) 'You then get rid of the ramrod and the copper cap, and at a very trifling expense you have, at all events, a very good breech-loader.'²⁰⁸

As for Russell, General Peel did not specifically refer to Russell's letter of 9 July; he simply acknowledged '....that we had accounts of the effects of breech-loaders from the special correspondent of *The Times*', as well as from Captain (sic) Crealock in Vienna and Colonel Walker in Berlin.²⁰⁹ On the other hand, it does appear that *The Times* and Russell are

²⁰⁸ *Hansard*, 13 July 1866, 782-7, and 16 July 1866, 826-40.

²⁰⁹ *Ibid*, 837.

entitled to some of the credit for the setting up of the all-important 1864 committee.

Lieutenant Arthur Walker, a musketry instructor at Fleetwood, had expressed his admiration for the newspaper, its 'able correspondent' and Lord Elcho for their support, in a paper presented at RUSI on 6 June 1864, which he later claimed had stirred the government into action.²¹⁰

It is interesting to note that when, towards the end of 1865, the Canadian government felt threatened by a potential incursion of 'Fenians' from across the American border, they ordered 5,000 American Peabody breech-loaders as an immediate stop-gap, and asked the British government for longer term assistance. In response to this request, they received a first shipment of 30,000 Snider-Enfields, complete with their accoutrements, in 1867.²¹¹

To sum up, the process of equipping the British army with breech-loading rifles received its initial driving force from soldiers working with inventors at home and in America, fuelled by active experience in the American Civil War and stimulated by the success of the needle gun in 1864. Under those pressures, the process was carried out expeditiously, and the result was that the British army now carried a rifle '.... at present without its equal in Europe'.²¹²

Development did not stop there. In that same parliamentary discussion in 1866, General Peel had explained that the Snider-Enfield conversion was a short term expedient, to buy time until a newly designed weapon could take its place. Testing continued and, in 1871, the army began to receive the Martini-Henry, which had a smaller bore, but a greater range and improved accuracy at a distance; and once again the army could feel confident that their personal weapon was more than equal to what was in use in other armies.²¹³

²¹⁰ Walker, Lieut. A, 'Breech-loaders for the army, and gun-cotton as an explosive agent in modern warfare', *JRUSI*, vol. 8, 1864, 385-96 and 410.

²¹¹ Purdon, Charles J, *The Snider-Enfield*, (Canada, The Runge Press, 1963), 6.

²¹² *Pall Mall Gazette*, 7 July 1866, 5.

²¹³ Drake, Captain Mervin, 'On the military breechloaders of Prussia, France and England', *JRUSI*, 15, 17 April 1871, 441. Tyldon, Major G, 'The principal small arms carried by British Regular Infantry', *Journal of the Society for Army Historical Research*, vol.45, no.184, winter 1967.

The Snider-Enfield and the Martini-Henry were both single-shot rifles. The development of reliable integral ammunition had made it a practical proposition to produce a weapon which could fire more than one round before needing recharging, and several repeating rifles had been in use since the American Civil War. European armies, including the British, debated long and hard about the merits of such weapons. Those opposed to the idea were still concerned with the argument, familiar from the debate about the introduction of breech-loaders, that a soldier equipped with a repeating rifle would tend to fire off all his ammunition in a short time, which would be expensive as well as dangerous.

The Balkan campaigns of the late 1870s caused the military to revise their opinions. The Turkish army, largely equipped with modern American repeating rifles, demonstrated at Plevna how difficult it now was for an attacking force to overrun the defences of an entrenched and fortified base, if the defenders were armed with rapid-firing rifles.²¹⁴ During 1878 this generated some extremely lively debates at The Royal United Service Institution. Three in particular, two of them led by Colonel Clive and chaired by Wolseley, and the other by Captain Needham under the chairmanship of Lieutenant-General Sir Arnold Kemball, included evidence to show that the introduction of breech-loaders had not led to greater consumption of infantry ammunition during the Austro-Prussian and Franco-German wars, and that the Turks, while inflicting devastating losses on their assailants, had had no difficulty in keeping their infantry supplied with ample ammunition during the defence of Plevna.²¹⁵

Debate continued. A well-attended lecture at RUSI in May 1880, chaired by Beauchamp Walker, gave many of the soldiers who had seen the effects of modern rifles on the battlefield (including General Codrington, Colonel Charles Brackenbury, Lieutenant-Colonel Lonsdale Hale, Major Fraser and the lecturer, Captain James) the opportunity to

²¹⁴ Their infantry weapon was the single-shot Peabody-Martini but the cavalry had repeating Winchesters. Greene, FV, *Report on the Russian Army and its Campaign in Turkey in 1877-1878* (Nashville, The Battery Press, 1996), reprint of 1879 ed., 141. Maitland, Lieut.-Colonel E, RA, Memoranda on technical points, 15 Dec. 1877. PRO WO33/32, 209-23. At Plevna the defending infantry appear to have used both weapons; the Peabody at long range and then the Winchester when the assaulting troops came close. Smith, WHB, *Small Arms of the World* (London, Arms and Armour Press, 1973), 68.

stress the deadly impact of rapid fire, and that ‘... the future undoubtedly lies with repeating rifles’.²¹⁶ At the end of the year work was well in hand on finding the right weapon for the British forces, and it is interesting to see that the Admiralty were particularly insistent that there should be a positive outcome. Two documents in the Wolseley papers at the PRO show how attention was being paid to continental reports of technical developments in this field, and the level of experimentation, with every available model of repeating and magazine rifle, which was being carried out at the time.²¹⁷ It was to be another ten years before the British infantry received the Lee-Metford, their first magazine rifle, but the ground had been prepared.²¹⁸

²¹⁵ Clive, Colonel E, ‘On the influence of breech-loading arms on tactics, and the supply of ammunition in the field.’ *JRUSI*, 22, part 1, 12 April 1878 and part 2, 10 May 1878. Needham, Captain John, ‘Lessons from the late war’, *JRUSI*, 22, 28 June 1878, 943-4.

²¹⁶ James, Captain Walter H, RE, ‘Modern fire: Its influence on armament, training and tactics’, *JRUSI*, 24, 1880, 378-403, 384.

²¹⁷ Carmichael, Captain LM, Memorandum upon Magazine and Repeating Rifles, 6 November 1880, and Boys, Vice-Admiral Henry, Second Progress Report of Committee on Machine Guns, 9 December 1880. Both in PRO WO 147/52.

²¹⁸ Spiers, *Late Victorian Army*, 238-40.

Chapter 4

Organising the army

This chapter will look at the structure of the military forces, including the regular army and its reserves, the militia and the volunteers. It examines how the army's position in relationship to Crown and Parliament was called into question by events in Europe, the difficulty with which the army's rôle was defined during the period, and the effect which continental structures had in exposing the need for radical change in military organisation. Three issues dominate the argument; recruiting and maintaining enough men; creating a responsive organisation; and establishing a body which could provide the army with strategic direction.

It was often said at the time that one of the reasons why the British army was not better equipped to carry out its rôle was that this had never been defined, and that the military leadership did not know what they were supposed to plan for or guard against.¹ The validity of this claim is open to the challenge that, whenever the issue was raised and possible priorities put forward, there was little disagreement amongst those who took part in the debate. The point at issue was that, compared with their potential continental rivals, British soldiers could not afford to focus their attention on a narrow range of possible threats; unpredictable emergencies might crop up anywhere in the colonies. It seems more plausible to argue that the army was as aware of what it might be called upon to do as the peculiar circumstances of the country would allow, and that its purpose in raising the subject was not so much to try to identify its rôle as to force the politicians who ultimately controlled the purse-strings to acknowledge the scale of the resources which were needed to enable that rôle to be fulfilled. Wolseley illustrated this forcefully in an article which he wrote for *Macmillan's* in April 1871. Certainly, he spelt out the priorities — though, curiously, he left out the obligation which traditionally headed the list at this time, the support of the civil power; but it is reasonable to speculate that Wolseley, as an

¹ 'Of all the evils in the British army, this is far the worst. Everything is unsettled. No man knows what the exact duty of his office is.' Anon, 'The defences of England', *Macmillan's*, vol.22, Sept. 1870, 399.

Anglo-Irishman, would have been so familiar with that overriding aspect of the army's role that he did not feel it necessary to include it. His list of priorities is;

1. The defence of these Islands from invasion.
2. The police of the seas, so that our merchant ships might sail round the world in safety.
3. The protection of our colonies and foreign possessions.
4. The liability of having to send a contingent of 100,000 men to the continent of Europe to assist an ally.²

In setting out the army's stall, he made the point that it was Parliament and people, not 'educated soldiers', who must wake up to the implications, in terms of cost and preparation:

If a clear statement of our military requirements is now so laid before the people, through Parliament, that as a nation we learn to feel that the maintenance of a certain determined force is necessary for the preservation of our national existence, no future Ministry will ever dare to leave us without it.³

Paradoxically, the very process for which Wolseley was calling would lead, during the last two decades of the century, to a serious controversy about the army's priorities. This involved the heated debate between the 'blue water' and 'continental' schools, on whether or not the army should plan for an active role on the continent. This will be referred to in chapter five, but in 1871, when Wolseley wrote his article, that was very much in the future. He was about to take up the appointment of Assistant Adjutant-General at the Horse Guards (his reputation high following his success with the Red River Expedition) specifically to add impetus to Cardwell's reforming plans,⁴ so there may be some significance in the fact that he chose to set out the detailed implications of his proposals in a signed article. This suggests that he felt confident that, in saying what

² Wolseley, Colonel Sir Garnet, 'Our military requirements', *Macmillan's*, vol.23, April 1871, 526. It can reasonably be claimed that the first three priorities were self-evident. As to the fourth, the Commander-in-Chief had already specified this precise force, in his memorandum of November 1870 for the Secretary of State. Verner, vol.2, 41.

³ Ibid, 525. This theme recurs throughout the period. See, for example Simmons, Sir Lintorn, *The Military Forces of Great Britain*, (London, Mitchell, 1871), 105-6, and two anonymous articles, 'A scheme for the re-organization, recruiting, and instruction of the army', by 'an officer of rank', *JRUSI*, vol. 4, 1860, 73-4, and 'The military position of England', in the *Fortnightly Review*, vol.18, 1875, 109.

⁴ Wolseley, Field Marshal Viscount, *The Story of a Soldier's Life*, vol.2, 226-7. His appointment dates from 1 May 1871.

he did, he had the support of the Secretary of State as well as his fellow ‘educated soldiers’.

Crown and Parliament

At that time the relationship between the army, the Crown and Parliament had not been entirely clarified. As was the case with other national institutions, it had evolved through a series of constitutional upheavals during the struggle for power between monarch and legislature.⁵ From time to time ministers might feel able to assert that there was no longer an issue about where ultimate control lay; Cardwell, for example, answering a question from Lord Elcho in February 1869 about whether ‘.... any doubt arises as to the relative position of the Commander-in-Chief and the Secretary of State for War’, declared that ‘.... having stated that the authority of the Secretary of State is supreme, I, of course, agree in the opinion of my Noble friend that there exists in principle no dual government’.⁶ Nevertheless, there was wide recognition that ‘dual government’ did exist. Professor Strachan makes this clear by summarising a contemporary view of the situation as set out in the introduction to *The Military Forces of the Crown: Their Administration and Government*, written by a War Office official, Charles M Clode, and published in the same year as Cardwell’s answer to Elcho. The William III settlement, he says, safeguarded the freedom of the people

by vesting the command of the army in military officers responsible to the crown, and by vesting the administration of the army in civil ministers responsible to parliament.
Herein is the orthodoxy.⁷

In line with this orthodoxy, historians of the British army have said that Cardwell’s reforms, whatever else they did or did not achieve, settled this particular issue. Spiers says that Cardwell

⁵ Strachan, Hew, *The Politics of the British Army* (Oxford, Clarendon Press, 1997), gives a clear summary of the issues, particularly in ch. 3.

⁶ *Hansard*, 3rd series, vol. CXCIV, 23 February 1869, 203-4.

⁷ Strachan, *Politics*, 44. Douglas Galton, writing at the height of the debate about the Cardwell proposals in 1871, used the same source to set out the historical basis of dual control, in ‘The military forces of the Crown’. 212-4, 242. See also Griffiths, Major Arthur, *The English Army: Its Past History, Present Condition, and Future Prospects* (London, Cassell Petter and Galpin, 1878), 51.

terminated the so-called ‘dual government’ of the army, by establishing a statutory distribution of duties within the War Office and by formally subordinating all administrative officers, including the Field Marshal Commanding in Chief, to the Secretary of State.⁸

So does Luvaas. ‘This gifted and courageous administrator reorganized the War Office in 1870, thus ending the system of dual control by bringing the administration of the army clearly under the thumb of the secretary of state’.⁹

Later in this chapter it will be argued that in fact the issue of dual control rumbled on throughout the rest of the century. As late as 1897 it was possible for one of the rising stars of the army to write, admittedly for a German audience, that ‘(t)he Queen is the head of the army. It is administered in her name by the Secretary of State for War, and commanded in her name directly by the Commander-in-Chief’.¹⁰ It is difficult to believe that any Secretary of State from Cardwell onwards would have accepted that the word ‘directly’ presented a true picture of the constitutional position. On the other hand, the Queen continued to think of the army as ‘her’ army, in a personal way that she would not have claimed for the navy, at least until her cousin was persuaded to retire in 1895.¹¹ Putting this aspect of the issue to one side (as successive governments managed to do), it was still the case that soldiers continued to talk about dual control in relation to the army, though with a more pragmatic connotation. The question which they were actually addressing — accepting the ultimate supremacy of the Secretary of State — was how far, and by what means, Parliament would actually assert its control over the commanders of the troops.

It will be shown that continental institutions, and particularly the structures for controlling the armed forces, were carefully studied, often held up as exemplary systems to be copied, as often criticised in the light of their subsequent performance in the stress

⁸ Spiers, *Late Victorian Army*, 2.

⁹ Luvaas, *The Education of an Army*, 99.

¹⁰ Grierson, JM, *Scarlet into Khaki*, new edition (London, Leventhal, 1988), 98. Originally published in Germany, 1897.

¹¹ The royal view of their direct personal relationship with the army appears to have continued into the following reign. See Ian Beckett on Edward VII’s attitude in ch. 3 of French, David and Brian Holden Reid (eds.) *The British General Staff: Reform and Innovation, 1890-1939* (London, Frank Cass, 2002), 47.

of war; and that they had a considerable influence on the organisation of the British service.

So far as the big constitutional issue was concerned it has to be said that the British paid very little attention to what was happening on the continent. At the practical level, however — of how to create a coherent and effective military structure within the framework of the constitution — it was conceded that there was merit in seeing how other countries addressed the problems involved. The experience of the Crimea had had much to do with this. There, the failures of the British military organisation had been embarrassingly contrasted with the better performance of the French. Even then, however, at the height of the controversy provoked by the sustained press campaign and the subsequent parliamentary enquiry, there was no lack of voices to say that the administrative chaos had been grossly exaggerated.¹² Nonetheless, the more professional performance of the French served to enhance the generally accepted opinion that they remained the pre-eminent military power, and therefore a model as well as a threat for the British army.¹³ The Volunteers who came forward in 1859 were inspired to do so by that threat, but the model was held up to them for emulation as well, in a series of articles which Engels wrote for the *Volunteer Journal* in 1860 and 1861, praising every aspect of French organisation.¹⁴

In the aspects of most concern — the control of the forces, their numbers, disposition and terms of service, the arrangements for supplying their material needs, and the auditing of expenditure — the French example was accepted as the most significant,

¹² Strachan, *Wellington's Legacy*, 2-3, gives many contemporary references.

¹³ A typical example can be seen in the evidence of Sir WT Power, Commissary-General, to the Strathnairn Committee, Appendix 17, 2nd Report, 23.3.1867. HC 1867, XV, 402.

¹⁴ Chaloner and Henderson, *Engels as Military Critic*, Part III, reproduce these articles in detail. However, in their introduction, xvi, the editors do point out that a contemporary reviewer, writing in the *United Services Gazette* of 23 March 1861, criticised '.... that new-fangled admiration for French soldiering which we, after long and intimate knowledge, hold to be an utter delusion.'

as well as the most accessible.¹⁵ This perception would change, and the process can be seen to evolve in three stages over the twenty years of this study.

During the early 1860s there was a growing interest in how these matters were organised in other countries, particularly in Russia (the other perceived threat to British interests), Austria, the USA and Switzerland (this last because of its then unique solution to the problem of creating a nation trained in arms). Prussia, judged largely on the basis of the indecisive performance of its army during the troubles of 1848-9 and its impotence in 1859, was generally regarded as a poor model, and at this first stage was often contrasted unfavourably with France. 'We can fight our battles, whether it be necessary to defend our own shores or to send 100,000 men to the other side of the earth to reconquer an insurgent province. Prussia unaided could not keep the Rhine or the Vistula for a month from her ambitious neighbours,' was a typical *Times* judgment of the period, followed five days later by a more dismissive sneer. 'She has a large army, but notoriously one in no condition for fighting. ... No one counts on her as a friend; no one dreads her as an enemy.'¹⁶

The second stage, in the aftermath of the Danish War of 1864 and the Austro-Prussian War of 1866, saw a rapid re-appraisal of Prussia's position, graphically illustrated by Charles Chesney's commentaries, the tone of which changed from cool disparagement in January 1866, through measured analysis of Prussia's progress in July, to the frank acknowledgment by January 1867 that Prussia was now a formidable power.¹⁷ France's pre-eminence, though under challenge, was still generally accepted in 1869, as Sir Archibald Alison concluded in February of that year. While noting — in stigmatising '...the ignorant economy of the Parliament of Britain' as the cause of the army's disorganisation in the Crimea — that 'Austria was economical in her arms and training, and she was trampled down by Prussia in a ten days' campaign', he nevertheless

¹⁵ For a typical assessment of France's predominance at this time, see Petrie, Captain Martin, 'The military forces of the Nations of Europe', *JRUSI*, vol.5, 1861, 45-67, 61.

¹⁶ *The Times*, editorials, Thursday, 1 November 1860, 6, and Tuesday, 6 November 1860, 8.

¹⁷ Chesney, C, 'Recent changes in the art of war', *Edinburgh Review*, vol.73, January 1866, 97. 'The military growth of Prussia', *Edinburgh Review*, vol.74, July 1866, 593-4. 'The campaign in Western Germany', *Blackwood's*, vol.101, January 1867, 82.

denied that the Prussians were necessarily a better model than the French. ‘When they have fought for a whole summer on the Rhine with the French army — equally well armed and organised, and with a five years’ service for its conscripts — it will be possible to give an answer to this question’¹⁸ He continued his analysis two months later, using as his starting point a recently published report prepared for the War Office at the Topographical Department, and drew the same conclusion.¹⁹ The French regular army was the best; its long-serving veterans ‘ a tower of strength in the hour of need’. Where the Reserve was concerned, ‘(w)e believe this to be the best in Prussia, most numerous in Austria, and least powerful in France’. Taking the two together, ‘ we are inclined to believe that the French Imperial army will take the field with a war strength superior to that of either of the great German Powers’.²⁰

The final stage, reversing all such previous judgments, followed inevitably from the triumph of German arms in the war of 1870-71; Prussia/Germany now became both model and threat, and the humiliation of the French an example to all of the price of bad organisation, startlingly exposed.²¹ The impact of this process of reassessment on thinking in Britain must now be examined.

Until 1865 Britain did not maintain military attachés as a matter of course in foreign capitals, though from time to time officers might be sent to sensitive posts as Special Commissioners. France, however, was the exception, as the career of Edward Stopford Claremont demonstrates. Having served for ten years in Canada as a young officer (where it may be inferred that he had an opportunity to polish his knowledge of the French language), he was attached to the Headquarters of the French Army of the East from April 1854 till July 1855, and then appointed Military Commissioner at Paris, where he continued to serve (as Attaché on Special Service from 1858, including an interlude on

¹⁸ Alison, Sir A. ‘On army organization’, *Blackwood’s*, vol.105, February 1869, 153, 160-1.

¹⁹ Alison, Sir A., ‘On the reorganization of the armies of the continental powers’, *Blackwood’s*, vol.105, April 1869, 466-79. The WO report, written by Lieut.-Colonel Cooke, CB, RE, November 1868, is in PRO WO 33/19.

²⁰ *Ibid*, 471, 472.

²¹ From September 1870 on, so much was written to this effect, that it would not be sensible to try to give a true picture in a footnote, but the pages of *Blackwood’s* alone, in the following few months, contained six

campaign with the army in Italy in 1859, and Military Attaché from 1865) until he resigned at the end of the Franco-German War.²² His contribution at the time of the British reaction to the ‘panic’ of 1859-60 was referred to in chapter three, and the Cowley Papers make it apparent that Ministers, the Commander-in-Chief and the Queen continued to seek his regular advice, because of their close interest in all aspects of French military organisation throughout the 1860s.²³

Claremont’s letter of 23 September 1862, commenting on Captain Martindale’s report on the French camp at Châlons, reflects a continuing British interest in this enviable permanent resource. Charles Hamley, for example, had written a long and generally admiring article about the camp in *Blackwood’s* in 1859, emphasising the advantages which the French army enjoyed as a result, in terms of organisation and morale. ‘It is when we advance from bodies to masses, when we pass on from battalions to brigades and divisions, that the superior experiences and the greater practice of the French troops show to advantage.’ ‘Exalt a vocation and the members of it will exalt themselves. Give the soldier his place in society, and he will make himself worthy of it.’²⁴ That the War Office continued to regard Châlons as a principal source of information about developments in the military profession throughout the 1860s is apparent from surviving reports in the War Office files. In 1865, for instance, they ordered the printing and circulation of a translation of the papers which Marshal Mac-Mahon (sic) had issued to the ‘General and Staff Officers serving at the Camp’ during the 1864 manoeuvring season;²⁵ and as the war clouds began to thicken in 1869 General Codrington, sent to observe the French and Prussian manoeuvres, reported in great detail what he and Claremont had learnt there.²⁶ As Codrington’s immediately following reports

articles by William Hamley and four by GR Gleig emphasising the new threat and the importance of the lessons to be learnt, reaching some sort of a climax in May with George Chesney’s ‘Battle of Dorking’.

²² Details from FO List 1880.

²³ Appendix B2 gives extracts from some of Claremont’s reports during the 1860s. His connection with the Court was emphasised in October 1862, when he was appointed one of the Grooms of the Privy Chamber to her Majesty.

²⁴ Hamley, Charles, ‘Châlons — The camp’, *Blackwood’s*, vol.85, March 1859, 268, 271.

²⁵ *Camp at Chalons, 1864. Papers issued to the General and Staff Officers serving at the Camp*, (London, Topographical and Statistical Department, War Office, 1865). PRO WO 33/15/0261.

²⁶ Codrington, General WJ, ‘Report to the Adjutant General to the Forces on the Manoeuvres at the Camp at Chalons’, 8 October 1869. PRO 30/31/14.

on the Prussian army show,²⁷ threats to France's professional pre-eminence were beginning to emerge, but until the startling events of the following year her military institutions continued to enjoy great respect.

EB Hamley summed up this admiration for the French system in typically flowery language.

All that science can do by its researches, all that mechanical art can effect by its practised skill, all that industry can ascertain by experiment, is brought to complete the organisation and material necessary for the effective action in modern war of this great numerical force. Incessant discipline, vast arsenals, organisation at once comprehensive and minute, for the supply, equipment, and movement of the troops; a trained staff and trained commanders — all aid in giving the utmost efficiency to the vast machine.²⁸

The references to 'great numerical force' and a 'vast machine' reflect a growing awareness of the fundamental nature of the changes in the armies of the continental powers since the previous century, in terms of management as well as size. The first questions to ask, therefore, were why this had happened and whether Britain should or could match the changes.

Addison's analysis of the national defences in *Fraser's Magazine* in December 1859 dealt succinctly with the first question. Britain was the most powerful and advanced nation, but its structure was 'commercial', while the continental powers were '.... governmental, and have habitually in view a state of war at the cost of national progress during peace'.²⁹ Addison, as was noted in chapter 3, supported the general opinion that this made Britain vulnerable to sudden invasion. Those who agreed with this would examine the details of army organisation abroad to see what lessons could be learned. A few robust voices, however, reflecting the conservative element within the ranks of the regular army, continued to maintain that, in general, the foreigners had got it

²⁷ Ibid. Reports of 19, 25, 30 October 1869.

²⁸ Hamley, EB, 'Louis Napoleon as a general', *Blackwood's*, vol. 95, March 1864, 326. It is interesting to note the similarities between this passage and his later encomium on Prussian organisation, after the war of 1870-71, in later editions of his *Operations of War* (page 335 in the 4th edition of 1878).

²⁹ Addison, JE, 'The National Defences', *Fraser's*, vol.60, Dec. 1859, 643.

wrong. An anonymous article in the *United Service Magazine* in 1863, having considered the structure of European armies in the light of the events of 1859, decided that there were lessons for all parties about the dangers of ceasing to rely on a long-serving regular army.

The whole German nation seems to be animated with the insane idea of getting up the greatest possible number of half instructed and loosely organized troops. Russia had its lesson in 1854-55, Austria in 1859; Prussia and the others will probably have their turn if they do not look sharp;(1859 showed the weakness of) the far-famed and extolled Landwehr system; it is in fact much on a par with our own constitutional force, the Militia, an imposing military crinoline, under it an ugly skeleton wrapped in parchment.³⁰

A paper presented to RUSI on 23 March 1860 set out the issues; ‘ it behoves us in the present perturbed state of Europe, and the uncertain position of our relations with foreign powers, to consider if some improvement could be introduced into our military system’.³¹ The Crimean campaign had shown that Britain had no reserves available to reinforce an army in the field. In addition to correcting this crucial weakness, a bigger army was essential, so the techniques for recruiting and retaining soldiers must be improved, which involved reviewing pay, conditions and length of service. A way had to be found for integrating all the available defensive manpower, Militia, Volunteers and Regulars, into a coherent force, and this must involve creating district-based depôts, twin battalions, and Volunteers brigaded with the Regulars in permanent divisions organised for war. To make such a system work, the quality of the leadership must be improved; officers must be subject to examination, and exposed to regular practical exercise in field manoeuvres.

In setting out the organisational issues the paper made no claim to be revealing previously unrecognised problems; indeed, it quoted extensively from a memorandum written the previous year by John Godley, Assistant Under Secretary of State for War, addressing the same subjects and referring in greater detail to what was happening on the

³⁰ Anon, ‘Military Studies — No.2, Organization’, *USM*, 1863, pt. 2, 70.

³¹ ‘A scheme for the re-organization, recruiting, and instruction of the army’, by ‘an officer of rank’, read by Colonel the Hon. James Lindsay, MP, *JRUSI*, vol.4, 23 March 1860, 74.

continent.³² That this RUSI paper was intended to make a serious contribution to the process of reform is clear from the date. It was presented by the Chairman of RUSI, an MP as well as a prominent soldier, on the day that a Royal Commission had been set up to inquire into the system of recruiting the army in the United Kingdom with the view of suggesting such changes in the organisation of the Recruiting Department as might tend to facilitate the raising of men in a more expeditious and economical manner and to prevent desertion.³³

If size and efficiency must be increased, the additional expense could not be ignored. In a Britain fairly identified by Addison as ‘commercial’, and proud of the prosperity created by its trade and industry, there was always a struggle between the desire to protect the country and its colonies on the one hand, and on the other to avoid devoting unnecessary expenditure of money or labour to an essentially uncreative activity. The speed with which the country reduced the money which it was prepared to spend on its army as soon as a particular crisis appeared to be over, and its reluctance to commit expensive resources to guard against hypothetical future threats, had, as has been seen, generated serious concerns for years amongst those directly responsible for national defence. The first problem was that, when they came to look at potential rivals with bigger armies, the British army appeared to be relatively so much more expensive. An article in March 1863 pointed out, indignantly,

.... that England *pays more by half a million* for the maintenance of her comparatively small military force, than France does for the support of her most efficient and splendidly appointed army, *four* times the strength of the British one.³⁴

The reason was clear; British administration cost more than twice as much as French because the French were not hampered by the inconveniences of a divided responsibility; total control of their forces was exercised for the Emperor by the Minister for War. The British might improve efficiency by copying some aspects of their *Intendance* system, but this could not solve the fundamental problem on its own, as the Chaplain-General of the forces continued to emphasise eight years later. ‘We pass over to Pall Mall, where

³² Godley, J, Memorandum on the Means of Recruiting the Army, and on an Army of Reserve. 22 March 1859. PRO WO 33/7.

³³ Collinge, JM, (compiler), *Office Holders in Modern Britain, pt. 9, Royal Commissions of Inquiry 1815-1870* (London, IHR, 1984). *London Gazette* 22245.

³⁴ Brady, J, ‘Relative cost of the French and British armies’, *Cornhill*, vol. 7, March 1863, 311.

Mr. Cardwell reigns; the supreme head over the most expensive, and, we may venture to add, by far the most inefficient, military establishment on the face of the earth.' The reason? Dual control; '.... it seems to us that the Controller (Sir Henry Storks) and not the General, will command the army'.³⁵

This theme, the *relatively* high cost of administering an army which did not actually give good value for money, would recur throughout the next twenty years,³⁶ and the reiteration of these invidious comparisons made its mark on the thinking of the establishment. The third report of the crucial Northbrook Committee, in February 1870, acknowledged the facts and accepted that the system was inefficient as well as cumbersome.

We have, from the best information at our command, compared these numbers with the numbers engaged upon similar duties in other Countries; and the result proves that a much larger Administrative Staff is employed in this Country, in comparison with the strength of our Regular and Reserve Forces, than in any of the principal Nations of Europe.

It will naturally be asked, why the numbers employed in England are so much larger than those employed by Continental Powers; and the answer is to be found in the fact that the whole Military Administration of this Country has been organized upon a system of want of trust, which has created double establishments for the transaction of the same business.³⁷

In recognising the situation, and describing the action required to alter it, the report made explicit references to European opinions and practices.

The tendency which exists in the Administration of the Army, both in the War Office and at the Horse Guards, to too great centralization in matters of detail, is very natural, and is not confined to this Country. In a remarkable essay on 'Responsibility in Times of War', recently published, the Archduke Albrecht, Field-Marshal Commander-in-Chief of the Austro-Hungarian Forces, ably combats this tendency, and lays down as fundamental principles of Army Administration, that there should be, —

³⁵ Gleig, GR, 'How is the country governed?', *Blackwood's*, vol.110, September 1871, 393,396. Lord Elcho made the same point in very similar words; *Letters on Military Organization* (London, Murray, 1871), 85.

³⁶ Commentators in the periodicals include Walpole, S, 'Army reform', *Cornhill*, vol.18, Dec. 1868, 671; Alison, A, 'On army organisation', *Blackwood's*, vol.105, Feb. 1869, 152; Dwyer, F, 'National armies and modern warfare', *Fraser's*, vol.1 ns, April 1870, 543. Similarly, MPs; Mr White, the member for Brighton, grumbled that '[w]e paid nearly six times as much as the French did', *Hansard*, 3rd series, vol.194, 11 March 1869, 1101; in 1875 John Holms, MP, returned to the charge; 'At the War Office at Berlin in 1870, some 268 men managed the whole of their large army at a cost of £51,739, whereas our small army was mismanaged by 568 persons at Pall Mall, and at a cost, that same year, of £170,000', *The British Army in 1875*, new ed. (London, Longmans, 1876), 52.

³⁷ *Reports of a Committee Appointed to Enquire into the Arrangements in Force for the Conduct of Business in the Army Departments* (London, HMSO, 1870), 3rd report, 12 Feb. 1870, ix.

‘1st. A strictly-organized and sharply-defined circle of action for each one in his own sphere, and to this end there must be —

2nd. Prevention of meddling by a superior authority with the sphere of action of his subordinates’³⁸

The Staff of the Army is divided into two distinct Branches; that of the Adjutant-General, and that of the Quartermaster-General. In France, and in the principal Military Nations of Europe a different organization is in force, under which there is one Chief Staff Officer, with such a number of Subordinate Staff Officers as may be required for the various duties which have to be performed [footnote omitted]. If the latter organization were adopted in this country, we believe that considerable advantages would follow.³⁹

This seemed to have established that the problem arose from ‘ our complicated, disjointed, indeed, it may be almost said chaotic military organisms’,⁴⁰ and that the solution was simply to copy the best continental practice. It would have been foolish to deny that there were indeed lessons to be learnt in this area, but it was equally clear that particular conditions applied in Britain which made it practically impossible to copy any continental structure slavishly. Most obviously, the needs of the far-flung Empire, the protection of the colonies and trade routes on which so much of the country’s prosperity depended, and above all the need to safeguard the possessions in India, meant that systems which worked for Prussia or France could not be applied to the British army in their entirety.

As always, the devil was in the detail, particularly when the issues related to recruiting, the terms and length of service, and whether voluntary service could provide enough men of the right calibre. In the event, the systems adopted struggled to produce the numbers required. This meant that, although efforts to borrow from the best of continental organisational structures achieved some progress, it was not possible to create a system capable of matching their potential rivals until the overwhelming emergency of a world war led to the imposition of conscription thirty five years after the end of this study.

³⁸ Ibid, xiii.

³⁹ Ibid, xvii-xviii.

For that reason, the organisational issues will be considered after the confused and confusing topics of recruitment, obligations and terms of service.

Manpower

The large armies of the continental powers were based on conscription. This confronted the establishment with an immediate problem. In Britain the issue was encumbered with so much emotional baggage that it was difficult to examine the practical aspects at all. There were always powerful voices to assert that the British people would simply not accept conscription, so there was no point in even considering this option. The excellent John Godley addressed the issue squarely in his 1859 memorandum. There must either be conscription or better inducements for rational men to enlist. Conscription

....is the simplest, the most intelligible; above all, the most certain to be effectual. Accordingly, it is now, I believe, adopted by every civilised nation except ourselves and the Americans. On the other hand, it is attended by such enormous hardships and other disadvantages, that I believe nothing except the terror of immediate invasion and conquest would induce the British people to submit to it.

Conscription, which is at first sight and superficially a cheap mode of recruiting armies, is in reality, the most expensive that can be adopted.⁴¹

These two objections, the one of principle, the other purely practical, were to dominate the debate, but initially it was the former which held sway. The 1860 Commission on Recruiting accepted it as indisputable. They recognised that it was ‘ essential to success to have the means of rapidly augmenting an Army so as to admit of large bodies of men being brought at once into the field’, but declared that it was not possible to raise them by conscription, even for the Militia. ‘In this the British so widely

⁴⁰ Noel, Robert R, ‘The battle of Sadova, and military organization’, *Westminster Review*, vol.31, 1 January 1867, 2.

⁴¹ Godley, ‘Memorandum on recruiting’, 1.

differs from all other European Armies, that we can draw no conclusions from any of their systems’⁴²

During the period of anxious reflection which followed the extraordinary success of the Prussian army in 1866, Henry Brackenbury, seeking for lessons for his own service, still felt bound to acknowledge that ‘.... compulsory soldiering is, and always has been, repugnant to the English feeling’,⁴³ and an article with a similar purpose in *Pall Mall* agreed that conscription was ‘.... at present, at least, out of the question’.⁴⁴ A decade later John Holms was still making the same uncompromising assertion;

Conscription for the Regular Army cannot be said ever to have had an existence in this country, and it is impossible to read the history of those efforts which have been made to introduce it, either directly or indirectly, without being satisfied that any new effort to force it upon the country would be resisted by the united judgment and intelligence of the nation.⁴⁵

This deeply ingrained prejudice notwithstanding, the issue did keep cropping up as the country began to appreciate the vast size of continental armies. In 1859 the wave of euphoria which began to succeed the ‘panic’ as the numbers of Volunteer riflemen increased, encouraged the *Illustrated London News* to declare that there was no need for conscription because a

‘....volunteer army such as this, composed of the best blood in the British Isles is a force of greater efficacy and value than is in the power of the continental states to enrol. Their constant conscriptions so drain the life-blood of the people that there is no reserve left from which, at the call of danger or of duty, an army of volunteers— costing nothing, but worth far more to a State than a paid army of double the numbers — can be raised for the defence of the country’.⁴⁶

No doubt this was intended as much to encourage the self-esteem of the Volunteers, a cause close to the heart of the *ILN* at the time, as to give a sober assessment of the

⁴² Report of Commission on Recruiting, 30 June 1860, HC 1861, XV, iii. The Commander-in-Chief used almost exactly the same words ten years later, in a memorandum to the Secretary of State. Verner, vol.2, 39.

⁴³ Brackenbury, HC, ‘Military reform (pt 1)’, *Fraser’s*, vol.74, December 1866, 685.

⁴⁴ ‘What sort of an army do we want?’, *Pall Mall Gazette*, 27 November 1866, 1-2.

⁴⁵ Holms, J, *The British Army in 1875*, 119.

⁴⁶ *Illustrated London News*, 21 May 1859, annual edition, 481. The same article declared the necessity of their electing their own officers. ‘A popular army must be placed under popular management.’ 482.

situation. Ian Beckett, in his history of the Volunteer movement, says that such bombast was not taken seriously by the professionals.⁴⁷ On the other hand, at least one responsible minister used much the same words as the *ILN* in the course of a long contribution to the debate on the Volunteer Bill in Parliament, in which he cited his experience of what he thought of as the volunteer armies then fighting in the American Civil War to support the conviction that ‘.... we had at our command over 150,000 men as efficient for the purposes of defence as any army which could be called into the field’.⁴⁸

However, Professor Beckett is surely right to maintain that professional opinion in general was aware that a semi-trained body of this size, however imbued with patriotic fervour, would be impotent to withstand a large modern army of trained soldiers. JA Ballard acknowledged the problem in August 1860 in *Blackwood's*. In amongst the pages of detailed analysis about how Britain must enhance the numbers and training of her voluntary forces in order to repel a foreign invader, he made passing references to the value of a *levée en masse*, without, unfortunately, explaining how this would be raised or trained.⁴⁹ An anonymous contribution to the *United Service Magazine* put the issue more bluntly; it was useless to spend money on fixed defences, whatever ‘distinguished officers’ might say, if the soldiers were not there to man them.⁵⁰ However, the immediate threat subsided, and distinguished officers prevailed.

A reawakening came in 1866. ‘The nation has been startled out of its slumber by the extraordinary successes of the Prussian army, and has learnt that those successes have been due to prevision and forethought,’ wrote Henry Brackenbury in December, in the first of five articles on the need for army reform.⁵¹ There were many lessons for Britain, but she could not slavishly follow the Prussian system for raising trained manpower, since even to revive the militia ballot would prove very difficult; though he made it clear

⁴⁷ Beckett, Ian, *Riflemen Form* (Aldershot, The Ogilby Trusts, 1982), 10.

⁴⁸ Hartington (Under Secretary for War), *Hansard, Parl. Debates* 3rd Series, vol. 170 (1863), 1699.

⁴⁹ Ballard, JA, ‘National defences and volunteers’, *Blackwood's*, vol. 88, 145, 150.

⁵⁰ Anon, ‘Our national defences — Fortifications, or an army in the field’, *USM*, 1859, part 3, 6.

⁵¹ Brackenbury, HC, ‘Military reform’, *Fraser's*, vol. 74, December 1866, 684. The other articles in this series followed in March, April, June and August 1867.

in a subsequent article, in the new *St. Paul's* in November 1867, that this was a matter for regret.

We labour under fearful disadvantages. Other nations take the flower of the manhood of the country for their armies, and the highest and lowest of their sons fight side by side in the ranks. Too independent to accept compulsory personal service even for our country, we yet are unwilling to pay the cost of our exemption, and instead of making the army the first of all professions, we seek only for how small a sum it is possible to get men of any stamp, and we lower our bidding till we can just fill our army with the dregs of our cities⁵²

The issue featured strongly in the crucial debate about 'Army organization' at RUSI the following April, under the chairmanship of Major-General the Hon. James Lindsay, now Inspector-General of Reserve Forces. Major Arthur Leahy, RE, who led the debate, referred at length to the Report of the 1866 Commission on Recruiting, noting that

.... while they were receiving evidence, war was declared between Austria and Prussia, and the astonishing result of the three weeks' campaign which ended in the defeat of the Austrians at Sadowa, and brought the war to a conclusion in a few weeks, caused increased public attention to be directed to our Military institutions⁵³

This had naturally suggested the Prussian system as a model for the British forces; but, although one of the principles of that system was '.... a general conscription with liability of every able bodied man to serve in the regular army or its reserves , [t]his principle could not be applied to this country',⁵⁴

But perhaps this was no longer the case. When the debate was resumed ten days later, a rambling intervention by Major Sir Harry Verney, MP, picked up the point that the Prussian system of short service was the key to the size of their army. Challenged whether this implied that conscription was the answer, he said 'I think every man in this country is bound to be ready to serve his country when danger is at hand', and later in the debate Lord Ranelagh advocated the revival of a militia ballot.⁵⁵

⁵² Brackenbury, HC, 'The military armaments of the five great powers', *St. Paul's*, vol.1, 194.

⁵³ Leahy, Major Arthur, 'Army organization', 27 April 1868, *JRUSI*, vol.12, 1868, 329.

⁵⁴ Ibid.

⁵⁵ Ibid, adjourned debate, 346, 351. Verney (1801-1894) was the son of General Sir Harry Calvert. He adopted the name Verney on inheriting Claydon House from a cousin of that name. Florence Nightingale was his sister-in-law. He served in the infantry and the guards, and was an MP for fifty-two years. *DNB*.

The events of 1870-71 intensified the concern. In February 1871 Leahy, now a Lieutenant-Colonel, led another debate on army organisation at RUSI, during which Colonel Ouvry, after quoting Moltke on the virtues of ‘ a nation in arms trained to habits of military discipline and obedience’, fiercely criticised opponents of conscription, like Frederic Harrison, for showing ‘ such an ignorant impatience at performing a natural duty, as is evinced in the above quotation, a natural duty which is submitted to by all other nations’.⁵⁶ The Duke of Manchester expressed strong support to ‘make every man serve’. Later in the debate, Mr. Chadwick advanced the merits of the Swiss system of a national militia, and Mr. Dickinson, claiming fourteen years’ experience of the working classes, gave the Harrison view, that the working man would never stand for it, the *lie direct*.⁵⁷

In fact, while majority opinion remained hostile to compulsory service, the practical issues were taking on more importance. The fact that the British land forces were relatively more expensive was undeniable. Was conscription part of the solution to that problem? At the most simplistic level, it seemed that it was. Conscripts in Europe were paid very little, yet provided vast numbers of trained men, many of whom were of high educational and moral calibre.⁵⁸ However, military professionals in Britain, bred in a society perhaps more attuned to the sophistications of mercantile thinking than their continental counterparts, were alert to the fact, which Godley had highlighted, that the true cost to the national economy was more than a simple sum of the numbers of soldiers and their wages. Even in 1859, Addison had noted the adverse impact of conscription in other countries on ‘national progress during peace’.⁵⁹ Several commentators elaborated on this theme, the damage which a ‘commercial’ economy must suffer if all its manpower, including those with valuable skills, were to be removed from the civil

⁵⁶ Leahy, Lieut.-Colonel, RE, ‘The organization of our military forces’, 14 February 1871, *JRUSI*, vol. 15, 1872, 187. The ‘above quotation’ referred to — ‘[b]ut the Prussian system is impossible in England; England will never consent to undergo Bismarkism [sic]. Any attempt to force the working man into the ranks will be resisted even to the “*ultima ratio populi*, no blood tax shall ever be levied in England”. If such is attempted there will be an end to the ruling classes and the monarchy’ — was taken from Harrison, F, ‘Bismarckism’, *Fortnightly Review*, December 1870, 631-49.

⁵⁷ *Ibid*, 189, 190-1, 225.

⁵⁸ Alison, ‘On army organization’, 152. The fact that a thorough-going conscription improved the calibre of the forces was a recurring theme. See Brackenbury, HC, ‘Military reform’, 684.

⁵⁹ See note 29.

economy during many of their productive years.⁶⁰ In addition, two informed observers drew attention to the fact that in Germany (the archetype of a conscription society) there was a significant hidden annual cost arising from the subsidies provided by families for the support of their conscript sons and from their billeting within the native population. John Holms, analysing the Prussian budget in detail, put an annual figure of £505,000 on this contribution, but the well-informed General Beauchamp Walker set it much higher, at £1, 900, 0000.⁶¹ Sir John Adye, writing some years earlier, had acknowledged the same point, but felt that national security was more important in the final analysis than economy.

It may be true that the Prussian system, in removing so many from the pursuits of civil life, is equally costly in the end. Conscription doubtless consists in obtaining the services of men below their market value, but then they obtain what they require — namely, soldiers sufficient for national defence; and when the safety and honour of their country are at stake, they are lavish, not of their money, but their blood.⁶²

However, in the end the decisive issue was trade, even more than money, and this was where Britain really differed from her continental neighbours. Whatever her concerns for home defence or for possible intervention on the mainland, the reality dictated by Britain's overseas commitments was that most Regular soldiers (unless they were Household troops) would be required to serve two thirds of their time in India or some other distant part of the country's overseas possessions, and this was only administratively practicable if they were engaged for a longer period with the colours than was provided for by the continental systems. (Russia, with its gigantic army of serfs conscripted for life, was the solitary exception, but no possible model.)

A few soldiers saw the solution as lying in creating two armies, a long-service volunteer army for overseas service and a conscripted army for home defence. In November 1870 Robert Home argued that the only practical solution was to put all men

⁶⁰ See, for example, Ardagh, JC, 'The comparative cost of the armies of different nations, and the loss to a country by conscription', *JRUSI*, vol.20, 1876, 218-52.

⁶¹ Holms, *The British Army in 1875*, 68-70. Walker, General CP Beauchamp, 'Compulsory or voluntary service', *Macmillan's*, vol.38, October 1878, 452-8.

⁶² Adye, Brigadier-General John, RA, 'National defence and army organisation', *Blackwood's*, vol.110, August 1871, 213.

to the ballot, train them in the army at home for long enough to make them soldiers, then transfer them to the Militia; the ranks of the army overseas could then be replenished by volunteers from among these men.⁶³ Captain HLW Hime, RA, strongly recommended a similar solution in an essay in 1875, and was given the RUSI prize for it. Every other country in Europe had adopted conscription and, whatever the arguments against it, it must come in the end.⁶⁴ His version entailed the abolition of the Militia and the Volunteers, rather than their integration, but, as he predicted himself, entrenched opinions in favour of those forces were enough to ensure that this was unacceptable in the short term. Accordingly, the solution to the problem of recruitment would have to be sought elsewhere than through compulsory service for a short time with the colours, followed by years of Reserve or Militia commitment.

The need, set out in the 1860 Report, was for a body of trained men large enough and accessible quickly enough to enable the British army to meet and sustain its possible commitments in the new environment. Putting conscription to one side, was it advisable, or even possible, to copy foreign patterns of service on a voluntary basis? Godley's 1859 Memorandum laid down the markers by describing how the system worked in Europe, and saying that Britain must achieve a comparable result.

In Prussia, the whole male population is compelled to pass through the ranks of the army, and, after a short service as regular soldiers, they fall back into — 1, the Army of Reserve; and, 2, the Landwehr or Militia, in which their names are enrolled until they attain the age at which military service is dispensed with. In Austria, Russia, France, and Sardinia, the same end is aimed at by a system of furloughs.⁶⁵

Without compulsion, there was only one way to make '.... the army a desirable profession for rational men', and that was to '.... give the market price for every man whom we raise'.⁶⁶ If Britain paid enough, the men would be forthcoming. Then the question of the Reserve could be tackled. The evils of the unique British Militia system were 'manifold and obvious'; it was 'as useless as it is costly',⁶⁷ but by reducing the

⁶³ Home, Robert, 'Army organization', *Macmillan's*, vol.23, November 1870, 75-6.

⁶⁴ Hime, Captain HLW, RA, 'Universal conscription: the only answer to the recruiting question', *JRUSI*, vol.19, 1875 92-127, particularly 111 *et seq.*

⁶⁵ Godley, Memorandum on Recruiting, 6.

⁶⁶ *Ibid*, 1-2.

⁶⁷ *Ibid*, 6,8.

length of service in the Regulars to either seven or ten years — the compromise peculiar to the British requirement to allow for service overseas — and by offering decent inducements to join the Reserve, the desired result could be achieved, and that without increasing the overall cost. This was a solution which continued to appeal to many of the traditionally-minded among the military establishment. In September 1869 Sir Archibald Alison described his own strategy for obtaining the men required in this way without abandoning the voluntary principle, and set out similar proposals from a distinguished array of interested parties including Sir Charles Trevelyan, Colonel Valentine Baker, Sir John Burgoyne, Colonel MacDougall and Lord Elcho.⁶⁸

However, as other commentators continued to point out, this would not be sufficient to deal with Britain's particular problems. While France was the model, the problem had not been so apparent. She also had overseas possessions to pacify, and, although she recruited her army by a different method, their length of service with the colours enabled France to solve that administrative equation in much the same way. The emergence of Prussia as a military power created an entirely new situation. Here was an army organised for continental war. Having no distant possessions to police or defend, Prussia could use her regular forces both to build up vast reserves and to provide the mechanism for taking them to war promptly.

The affairs of the Prussian army go on like a well-constructed clock so long as there is peace with other nations. ... War comes, and in a week or ten days' time, battalions, regiments, brigades, divisions, corps, are augmented to their full strength, and in readiness to move.⁶⁹

Unfortunately, neither the existing structure of the British army nor its commitments could be easily adapted to such a model. 'Prussia may, with impunity, make skeletons of line regiments, keeping up the cadres of officers and non-commissioned officers. Why? Because her entire male population consists of trained soldiers.'⁷⁰ In Britain, by contrast, while a Reserve made up of time-expired Regulars would be an invaluable resource in any serious emergency, the numbers would never approach those of continental reserves,

⁶⁸ Alison, Sir A, 'On the limitation of enlistment and army reserves', *Blackwood's*, vol.106, 279-89.

⁶⁹ Gleig, GR, 'The two systems', *Blackwood's*, vol. 109, January 1871, 125.

⁷⁰ Gleig, GR, 'Inefficiency of the British army', *The Quarterly Review*, vol.129, October 1870, 528.

and they would not be available to assist with the perennial requirement of the army — for drafts to keep its colonial forces up to strength.

There were two issues here. Not only was the Regular Reserve never going to rival the European armies in numbers; additionally, the regiments at home, committed to the duty of feeding drafts to the army overseas, inevitably contained in their depleted ranks an inordinate number of young recruits, neither robust enough nor sufficiently trained to match their potential rivals in a sudden emergency. The Adjutant-General, General Sir Charles Ellice, made the problem clear in two memoranda to Gathorne Hardy, the Secretary of State, in July 1877 and January 1878, contrasting the British situation with the reality of the German system which was the ostensible model. In his view, and he claimed to be speaking for the Commander-in-Chief, some of the evils might be ‘palliated’ if the twenty-four battalions next on the list for foreign service were maintained at ‘an increased establishment’, but the system would only work if drafts of reinforcements would always be drawn from the ranks of the trained Reserve.⁷¹ This sounded like the proposal of a solution, but in practice it was no more than stating the problem, in default of legislation to make the Reserve permanently liable to recall at any time, rather than just in response to a general mobilisation.

If the Reserves could not provide the manpower, then the Militia and Volunteers must do so. This would only work if their organisation could be integrated into that of the Regular army, and if it were certain that there would be enough of them. Some authorities continued to be confident that patriotism and better inducements to voluntary enlistment in the Militia would bring men forward in sufficient numbers to enable that body to become ‘ a training school for one year for the whole military force of the country’.⁷² Rather surprisingly, Wolseley, as late as 1878, was expressing the same opinion in a War Office report, because of what he had seen in America.

⁷¹ Ellice, CH, Memorandum on Major-General Whitmore’s Paper on Recruiting, 11.7.77, and Memorandum by the Adjutant-General, 19.1.78, PRO WO 147/51, 7-9.

⁷² Sir William Russell, MP, quoted by Adye, ‘National Defences’, 212. Adye also cited Lord Sandhurst, to the same effect. Major-General Sir Robert Walpole proposed a similar solution in a letter to *The Times* of Friday, 3 February 1871.

Nothing can be more erroneous than to suppose we cannot raise a very large army in England because we depend on voluntary enlistment. I was in America almost the whole time that the Confederate War lasted, and saw the United States raise nearly a million men upon that plan. In England, thanks to the volunteer system, we have at this moment about three-quarters of a million of men who have been more or less drilled as soldiers.⁷³

Others were not so confident, feeling that the only sure way to secure the numbers would be through a universal obligation to serve some time in an embodied Militia. In saying so, however, they sometimes found it expedient to express the concept in such a way that the word ‘conscription’ could be avoided. This was a favourite theme of Gleig’s. ‘Enough will be done when we see enrolled — not by voluntary enlistment but by ballot — some three hundred thousand militia’⁷⁴ Then the Militia could be so organised that ‘ at any time you may extend your standing army to whatever figure is desired’.⁷⁵ The struggle during the rest of the century to achieve the desired numbers in both Regulars and Militia suggests that in this matter the pessimists were more prescient judges than the optimists.

However, the political will was not there, and the reassurance offered by Wolseley’s assessment, with its echoes of Hartington’s confident words fifteen years earlier, continued to prevail.⁷⁶ Accordingly, the restructuring of the forces had to take place without the crucial addition of this guaranteed base of malleable manpower.

Organisation

The harshest lesson brought back from the Crimea was that the country must be prepared in peace for war. Continental powers were, and the message was clear, if bleak. The traditional, ‘commercial’, attitude of Government had always been to avoid wasting

⁷³ Wolseley, GJ, War between England and Russia, PRO WO 147/49, 1.

⁷⁴ Gleig, GR, ‘The two systems’, 127. A year later, he was more thorough-going, proposing making ‘ service in the militia universal ... Base the voluntary service of the regular army on the compulsory service of a militia’. ‘Reorganisation of the army’, *Fraser’s*, vol. 5, May 1872, 609, 611.

⁷⁵ Gleig, GR, ‘Reorganisation’, 611. For a similar view, see Vincent, CE Howard, ‘The armed strength of Europe’, *JRUSI*, vol. 19, 1875, 564. Havelock, Henry, ‘A national training to arms’, *Fortnightly Review*, vol. 19 ns, 1876, 430-64, makes similar proposals and also struggles to contrast a compulsory ballot (‘good’) with conscription (‘bad’). 449-51.

⁷⁶ See page 143.

money on the army during peacetime, and then, when war broke out, to shelter behind the Royal Navy until time and lavish emergency expenditure had recreated a respectable force. Burgoyne had denounced the fallacy of this in 1858;⁷⁷ Charles Brackenbury was still emphasising the warning in 1875; 'Prussia, and therefore Germany, can never be caught unawares. She is always and absolutely ready'.⁷⁸ The message was not lost on the many Commissions and Committees which were called upon to review different aspects of army organisation during these years, but their response to it was heavily coloured by the perception at the time of where to look for military excellence.

In 1859, when this still lay clearly with France, the systems of other countries were evaluated but the French was the favoured model. In particular, the *Intendance*, the department, directly responsible to the Minister for War, which enjoyed total responsibility for meeting the logistical needs of the French army, seemed to exemplify the merits of a centralised and integrated system which would achieve two desirable objectives; to provide a single and permanent mechanism for supplying the army's material needs, in place of the multitude of disconnected and discontinuous departments which were supposed to provide the same services (usually on an 'ad hoc' basis) in Britain; at the same time, to keep control of expenditure out of the hands of the soldiers. A series of Committees and discussions culminated in the Strathnairn Committee in 1866, which examined the procedures of every significant European army in exhaustive detail before proposing the adoption of the closest practicable copy of the *Intendance* in a new Control Department.⁷⁹

The details of the new department were thrashed out in an exchange of letters between the War Office and the Treasury which reveals the practical difficulties involved

⁷⁷ Burgoyne, General Sir JF, Popular Fallacies with regard to our Security against Invasion, June 1858. PRO WO 33/8, 509.

⁷⁸ Brackenbury, Major CB, RA, 'The intelligence duties of the staff abroad and at home', Friday, 19 February 1875, *JRUSI*, vol. 19, 1876, 247. He had stressed the virtue of preparedness in his translation for the Intelligence Department of the Report of the Committee on army re-organization upon the Bill upon the general organization of the French army. PRO WO 147/15, 4-5, 9. Wolseley heavily annotated his copy, and it is no surprise that he was expressing similar sentiments in 1878. 'England as a military power in 1854 and in 1878' *The Nineteenth Century*, vol.3, March 1878, 436.

⁷⁹ A summarised list of the reports on foreign armies which this Select Committee considered, showing the extent of the evidence which they took into account, is in appendix B 3.

in trying to emulate, under a parliamentary government, a system devised for a more absolute regime.⁸⁰ In France the central responsibility was clear; the Emperor, titular (if not, in the event, actual) Commander-in-Chief, controlled both the fighting soldiers and the *Intendance* through an appointed Minister for War, who was always himself a military man.

In Britain, although the objective was the same, the result was to perpetuate, and even to exacerbate, the uncertainties of the relationship between War Office and Horse Guards. The noble Commander-in-Chief remained in charge of the fighting troops. Within the War Office the Controller in Chief was to take responsibility for Transport, Commissariat, Stores, Purveyors and Barracks, but he was not, as originally proposed, to have the rank of Under Secretary of State. Instead, the structure was to be

1. An Under Secretary of State with the same duties as at present, competent to advise the Secretary of State on military matters, and who shall be generally, if not always, a military man.
2. A Controller in Chief, without the rank of Under Secretary of State, and with a salary of 1,500/.
3. A principal financial officer, with 1,500/ per annum, assisted by a deputy. This officer to be a gentleman of acknowledged financial reputation and experience in accounts, and always a civilian, and of equal official rank with the Controller in Chief.⁸¹

The way that the new department went about its business quickly led to strong criticism, but initially the complaints were that they had not gone far enough to reproduce the French system. A critical article by Spencer Walpole in March 1869 pointed out that in the event both the Under Secretary, Sir Edward Lugard, and the Controller in Chief, Sir Henry Storks, *were* military men, and the consequence was inevitable.

Sir H Storks was desired to embody the report into regulations; and if those regulations are honestly compared with Lord Strathnairn's report, it will be immediately seen that just as Lord Strathnairn fell short of the French, so Sir H Storks fell short of Lord Strathnairn. The intendants which, under the name of controllers, Lord Strathnairn had proposed to deprive of half their authority, Sir H Storks reduced to the position of the servants of the commanding officer. The intendants in France acting on their own responsibility, Lord Strathnairn converted into controllers

⁸⁰ Letters between Lt.-Gen. Sir E Lugard, Under Secretary, WO, and GW Hunt, Secretary to the Treasury, 19 and 28 Dec. 1867, 28 April and 29 June 1868. PRO WO 33/21A.

⁸¹ Ibid, 28 April 1868.

moving with the concurrence of the commanding officer; and Sir H Storks directed to act under the directions of the commanding officer.⁸²

If, he went on to say, these controllers had been given the proper authority ‘(w)e might have made each military command really complete in itself’; this, on the supposition that a controller and a commander with equal authority would in practice find it comfortable and easy to work together without friction.⁸³

That might possibly work in theory, but events the following year mercilessly exposed the shortcomings of the *Intendance* system. Suddenly, the virtues of a decentralised structure based on the principle of giving every field commander control of his material needs (within the limits of his sphere of command) began to seem obvious. By April 1871 Charles Chesney was explaining to the readers of the *Edinburgh Review* that the French General Trochu had, even before the Franco-German War broke out, been writing ‘.... expressly to expose the administrative shortcomings of the *Intendance* in the Crimea and in Italy, as regards the three important matters of the supply of military stores, provisions, and hospital necessaries’.⁸⁴ He contrasted the chaos which the crisis of 1870 had exposed in the French system with

.... that marvellous Organisation, to which the Prussians, above all other means, have owed the successes which in seven years have elevated their kingdom from a second-rate position among the greater States to be acknowledged as the most formidable military power ever produced since the days of Rome.

The key, he explained, was

.... the extraordinary completeness of preparation, which the decentralisation first begun in the province for its Corps, and carried down to each separate brigade, had prepared to make effectual. The secret of this grand success in the art of preparation lies in the facts clearly given by Lieutenant Talbot, that ‘the equipments and materials necessary to put the army on a war footing, down to the smallest detail, lie ready in the dépôts of the military train and in the armouries of the regiments.’⁸⁵

⁸² Walpole, S, ‘Military administration’, *Cornhill*, vol.19, March 1869, 317.

⁸³ *Ibid*, 318-9.

⁸⁴ Chesney, CC, ‘Studies of the recent war’, *Edinburgh Review*, vol.133, April 1871, 581.

⁸⁵ *Ibid*, 580. Two articles in *Fraser’s*, vol.5, March and May 1872, and attributed to the young Howard Vincent, contrasted the virtues of the German system and the shortcomings of the French particularly strongly; ‘Recent publications bearing on the War’, 331-40 and 553-69.

Chesney knew that Cardwell and his team of military reformers were already making valiant attempts to reproduce a British version of the district organisation, and to build on that a command structure which could produce an effective field force when required, but he was rightly dubious about the likelihood that control of the army's material needs would be similarly decentralised. He foresaw continuing controversy.

Unhappily, this great question of army administration, as applied to ourselves, has been made absolutely one of persons, instead of being discussed purely on principles. There are those in high office who believe their credit pledged to the carrying out their original design of a vast civil department pervading and checking the whole military fabric. There are others who are deeply sensible of the certain and ruinous evil of the dual management of a machine which should be the embodiment of unity, and so are ready to use any means to overthrow that double form of administration — the outcome of divisions between civil and military branches of the War Office — which has suddenly been laid upon our army to its sore discontent.⁸⁶

Chesney's gloom was well founded, since the arguments were not resolved for many years, for all the efforts of anxious military reformers. 'The control department is fast getting beyond all control', said Wolseley at the end of 1872,⁸⁷ and Charles Brackenbury elaborated on this theme in a lecture at RUSI.

.... There is rising up in our military system such an *imperium in imperio* as bids fair to deprive the Army of that feeling of brotherhood than which nothing is more essential to its efficiency. It is impossible to suppose that so fatal a step can be dreamt of as making the civil element within the Army superior to the military. If so, we might sheath our swords for ever; and the very appearance of such a notion is in itself to be avoided.⁸⁸

Five years later Lonsdale Hale was spelling out his detailed analysis of the German system in articles for *Macmillan's*, and complaining that one of the three reasons why Britain seemed incapable of emulating its excellence was the continuing unwillingness of

⁸⁶ Ibid, 581.

⁸⁷ Wolseley, Garnet, 'Our autumn manoeuvres', *Blackwood's*, vol. 112, Nov. 1872, 640.

⁸⁸ Brackenbury, CB, 'The autumn manoeuvres of 1872', Monday, 20 January 1873, *JRUSI*, vol. 17, 1874, 82.

the civil branches of the army to allow soldiers to control their administration and supply.⁸⁹

And so matters remained, as the 1870s ended. In the event, and typically, the need for the army to have control of its own transport and supplies — whether for service in the colonies or the world at large — was not recognised until one more scare about a possible threat of invasion, a decade later, suddenly focused attention once more on the need for a force which could take the field effectively.⁹⁰

Meanwhile, the impact on the British service of continental developments in the way that an army should actually fight — its tactics and the performance of its leaders — needs to be considered.

The shape of the army

Continental armies seemed to be much better organised for fighting a major war. Two particular factors were involved, and in both cases the Prussian army offered the obvious model. The first was the organisation of all the components of the land forces into corps d'armée based on defined geographical areas. This was seen to provide the opportunity for officers and men at all levels to become familiar with one another in peace, so that they would feel comfortable both 'vertically', within the hierarchy of command, and 'horizontally', when it came to working with other arms, if they went to war.

The second was the existence of a general staff, so constituted that it would provide, not only the professional services required by a sophisticated modern army, but also what

⁸⁹ Hale, Lonsdale, 'The spirit of the military training in the German army', *Macmillan's*, vol. 38, May 1878, 48-57, and 'Notes on the German military system', *Macmillan's*, vol.38, July 1878, 221-32. See, particularly, 231.

⁹⁰ Bond, *The Victorian Army*, 144. Spiers, Edward, 'The late Victorian army', in *The Oxford History of the British Army*, 195.

Henry Brackenbury later called ‘ the powerful brain of the military body, to the designs of which brain the whole body is made to work’.⁹¹ When British soldiers looked at the German General Staff their eyes were immediately drawn to the towering figure of its chief, the long-lived and much-admired Helmuth von Moltke. Inevitably, therefore, when the issue was discussed they found it difficult to debate the merits of having a general staff of their own without also having to address the potentially embarrassing question of how the responsibilities of a Chief of Staff could be reconciled with those of the existing British Commander-in-Chief. This was undoubtedly one of the reasons why the whole issue was allowed to drag on for a generation, until both Cambridge and his two successors had retired, but there was more to it than that.⁹² These two issues, localisation and the value of a General Staff, will now be addressed.

Localisation and leadership

The debate about the benefits of adopting a district-based structure on the Prussian model, embracing the Militia and the Volunteers as well as the Regular army, led directly to the structural changes introduced by Cardwell, but it soon became apparent they were not sufficient of themselves to create what would nowadays be called an effective ‘rapid reaction force’.

In April 1869 the report of the Director of Reserve Forces noted that France or Prussia could put 600,000 men or more into the field at need. If invasion threatened the British Isles there would be great confusion, unless all the forces available in the country were organised into military districts, and practised in operations by annual manoeuvres against the forces of other districts.⁹³ Sir Archibald Alison developed the theme, taking advantage of the opportunity of reviewing the autumn manoeuvres of 1871 to emphasise the importance of such a structure for creating effectiveness through familiarity.

⁹¹ Major-General Brackenbury’s evidence to the 1887 Select Committee to examine into the Army and Navy Estimates, cited by Spenser Wilkinson, 39.

⁹² A neat modern summary of the struggle to establish a British General Staff can be seen in Halik Kochanski’s ‘Planning for War in the Final Years of *Pax Britannica*, 1889-1903’, ch. 1 of French, David and Brian Holden Reid (eds.), *The British General Staff: Reform and Innovation, 1890-1939* (London, Frank Cass, 2002).

If the late campaign in France has taught one lesson more than another, it is that the days of going to war with brigades and divisions hastily formed from independent battalions, with a scratch park staff and new generals, are over.

We attach immense importance to the troops intended for these manoeuvres being, not pitchforked into Aldershot or any other central spot for formation, but being carefully formed into brigades always, and when practical into divisions, *in their own local districts*, and sent up to the general points of concentration fully fitted out for the field in every particular, under the brigadiers with whom they have been serving, with a staff to whom they are accustomed, and with their whole field equipment and transport provided by their own district controllers.⁹⁴

By 1876 the military districts which had been called for existed in principle, but, as Alison pointed out, this was only a theoretical structure, and ‘ a mere aggregate of isolated battalions, regiments and batteries is no army in the modern sense at all’.⁹⁵ When faced by ‘ the iron will of Bismark (sic), the far-seeing genius of Von Moltke ’ Britain could no longer rely on cobbling together a field force to meet an equally amateur foe, and must have one complete corps ready for immediate action.⁹⁶

It was at this time that John Holms, MP, was denouncing the army (using an approach rather similar to that of Sir John Harvey Jones a century later) for not being run on business-like lines. ‘What, I ask, would be the natural fate of a commercial business conducted after this fashion? Why, of course, bankruptcy would be speedy and inevitable.’ An example of what could be achieved was ready at hand. ‘The more carefully the military system of Prussia is examined, the more clearly it will appear that she has acted in this matter of military organisation on plain practical common-sense principles ’⁹⁷ This applied particularly to the way that their army corps were run.

Each Army Corps, then, constitutes an army in itself, and efficient management is the business of the General at its head. The competition between Commanding Officers in respect to efficiency and economy exercises a most wholesome influence. Moreover, autumn manoeuvres between the different Army Corps are regularly engaged in; they serve to

⁹³ Lindsay, Major-General Jas., Reserve Forces Report, 1868-9, PRO WO 33/19, 38 et seq.

⁹⁴ Alison, Sir Archibald, ‘Autumnal manoeuvres’, *Blackwood’s*, vol.111, March 1872, 328-9.

⁹⁵ Alison, Sir Archibald, ‘On army mobilisation’, *Blackwood’s*, vol.119, February 1876, 131.

⁹⁶ *Ibid.*, 140-1.

⁹⁷ Holms, *The British Army*, 49, 10.

test not only the capacity of the Generals in command, but also the efficiency of the forces, and the public have a clear notion of what they are paying for, and whether they have their money's worth.⁹⁸

Altogether, the picture of an army corps constructed, trained and led on the Prussian model, as described by all these contributors to the debate, was of a fully equipped and finely tuned machine. On mobilisation it enjoyed two massive virtues; swift access to all that was immediately necessary in the way of war stores and manpower reserves; and the efficiency conferred by being led to war by officers who were already fully familiar both with their specific roles and with one another. The contrast with the British system was clear. In Britain, they said, when a field force was needed, it had to be cobbled together from whatever units were available and could be brought up to strength by ad hoc expedients, its inevitably superannuated generals replaced by fitter (but unfamiliar) men, and a Staff created from scratch. It is easy to see that the Prussian model, so described, established a desirable ideal standard at which to aim, but it is reasonable to ask whether the model was actually so readily achieved by the Prussians in practice.

British commentators had to work with the information which was available to them, and this will not in general have given them access to detailed information about the mobilisation of individual Prussian formations. However, since 1892 an account of one Prussian regiment's experience of mobilisation in 1870 has been readily accessible to a British audience, as it was then that Major GFR Henderson translated and summarised the relevant pages of the *History of the 33rd East Prussian Fusiliers* for RUSI. When mobilisation was declared on 16 July 1870 this East Prussian regiment was on the Rhine, garrisoning Cologne as part of 16 Division of VIII Corps. What happened then is revealing. 'On the 17th the Officers detailed to bring in the reserves left for East Prussia', some 700 kilometres distant. So much for the advantages of being close to the dépôt.

The Corps Commander, being appointed Governor of the Rhineland, was succeeded by General v. Goeben, hitherto commanding the 13th Division, VIIth Army Corps.

⁹⁸ Ibid, 47-8.

The regimental Commander was appointed to the 3rd Landwehr Brigade and Lieutenant-Colonel Henning was transferred from the 40th Fusiliers to take his place.⁹⁹

To cap it all, they were immediately transferred to the 15th Division.¹⁰⁰ In other words, they went to war in the company of unfamiliar units, and under newly appointed commanders at every level, just what Wolseley and Holms complained about in the British service.

If the Prussia of 1870, its problems confined to the continent of Europe, found difficulty in achieving the ideal, it is no surprise that the British army continued to struggle with the problem. However, it has to be admitted that the difficulties created by such dislocations were significantly less severe in the Prussian army, and the explanation is to be found in the greater degree of training common to Prussian officers. James Fergusson was in no doubt about this. 'It is the marvelous homogeneity of the whole hierarchy of Prussian officers, from the chief of the staff to the youngest ensign, which has given their army such unity that its acts are like those of a single organised being.'¹⁰¹ Brackenbury's metaphor of the Prussian General Staff as its brain fits well with this concept of homogeneity.

General Staff

It is interesting to see how this realisation, that a sense of unity of purpose was one of the great advantages arising from the existence and power of the Prussian Great General Staff, gradually took hold of the imagination of the two Brackenburys. Henry Brackenbury was the younger by six years, but the first to offer his opinions about the need for army reform to the public. His writings and lectures in the 1860s had dwelt mainly on the need to look at recruitment, conditions of service and supply. When he touched on issues of leadership it was to propose the abolition of the post of Commander-

⁹⁹ Henderson, Major GFR, 'Précis of the Regimental History of the 33rd. East Prussian Fusiliers in the war of 1870-71', *JRUSI*, vol. 36, 1892, 71.

¹⁰⁰ Ibid, footnote, 72.

¹⁰¹ Fergusson, 'The national defences', 20.

in-Chief in favour of an all-powerful Minister of War on the French model, and his thoughts had not turned to the rôle of the staff.¹⁰² Meanwhile Charles, whose health was less robust, had been establishing his reputation as a historian and military instructor.

Both brothers managed to get to France during the Franco-German War, and what they saw profoundly affected their thinking. The admiration for Prussia's military system in Charles's lecture about the need for autumn manoeuvres has already been referred to. He now developed the theme in a paper for RUSI, contrasting Germany's sense of purpose and encouragement of individual initiative with the moral and structural laxity which he had seen in France.¹⁰³

His second lecture on autumn manoeuvres, noted earlier, explicitly proposed the Prussian staff arrangements as a model, but with this interesting qualification. 'The position of Staff Officers is or ought to be a definite one. They are not Generals nor, in any sense, leaders of troops, and it would tend towards the detriment of the Army if the Staff came to be looked upon as a body of Commanders, or even to be referred to on all occasions.'¹⁰⁴

A year later Charles was a staff officer himself, assistant to General MacDougall, the first head of the newly created Intelligence Branch. One of his first tasks was to prepare a report on how intelligence staff functioned on the continent, and for this purpose he examined the staffs of Prussia, Austria and France. His voluminous report emphasised that both France and Austria had learnt the harsh lesson that they must copy the Prussians, and that Britain lagged far behind them all in exploiting the potential benefits of the systematic use of Intelligence.

It is acknowledged universally that no good plans for defence can be made until a large amount has been accumulated of information, such as the Intelligence Branch is now seeking to obtain. This information is at present non-existent in England at least in any form suitable for military requirements.

¹⁰² The references here are particularly to his series of articles on 'Military reform', in *Fraser's*, in December 1866, March, April and June 1867, culminating in a final summary in August 1867.

¹⁰³ Brackenbury, CB, 'The military systems', *passim*.

¹⁰⁴ Brackenbury, CB, 'The autumn manoeuvres of 1872', 82.

In each country there is established at Head-Quarters, an organization which originates the ideas, decides upon the means, superintends the execution, accumulates and arranges the results, of all such studies made by the Staff for defensive and offensive purposes.¹⁰⁵

This passage shows his awareness of the value of the contribution which a staff organised on Prussian lines could make to the effectiveness of the army as a whole; and other parts of the same report suggest the direction in which his thoughts were moving. There are references to the selection of staff officers — that they were to be the cream of the army; to the importance of emancipating ‘Ordinary Staff Officers’ from the routine drudgery of the duties which took up the time of the staff in the British army, but were performed in Prussia by ‘Adjutants’ in the field and the Accessory Establishment (*Neben Etat*) in the Great General Staff; to the value of having the training of young officers under the aegis of the staff.¹⁰⁶

When, in February 1875, he was asked to give his lecture at RUSI on the same subject, in the presence of the Duke of Cambridge, he expanded the theme to show how crucial it was for the army to have a detailed plan for mobilisation ready to meet any predictable emergency, and ‘(i)n Prussia, Austria, France, the minor States of Germany, and, I believe, in almost all other European countries, the work above sketched is done by the “General Staff”’¹⁰⁷ Any country neglecting such preparations in peacetime must be prepared for catastrophic defeat in war, but in Britain ‘(w)e have our classes and examinations for the staff at the Staff College, and, having got our officers, we scarcely ever again set them to do real staff work till war comes’. Britain, he said, must employ more staff officers, use them for their proper purpose, and not be cowed by ‘.... that terrible word of power before which we all tremble, — the Estimates’.¹⁰⁸ Unfortunately, Cambridge’s closing remarks made it all too clear that the Estimates were indeed the fatal stumbling block, and that nothing could be done about it.

¹⁰⁵ Brackenbury, Major CB, ‘Report on the Departments of Foreign Staffs corresponding with the Intelligence Branch of the Quartermaster-General’s Department’, November 1874. PRO WO 147/23, 31.

¹⁰⁶ Ibid, 2, 3, 7-8.

¹⁰⁷ Brackenbury, Major CB, ‘The Intelligence duties’, 245-6.

¹⁰⁸ Ibid, 264.

Thus it came about that when Henry Brackenbury, ten years later (and after much diligent service in a succession of staffs hastily assembled by Wolseley to grapple with sudden emergencies), found himself at the head of the Intelligence Department he could only lament the lack of a General Staff. 'I cannot but feel', he reported to the Hartington Commission, 'that to the want of any such great central thinking department is due that want of economy and efficiency which to a certain extent exists in our army.'¹⁰⁹

To a student of military history, armed with the knowledge of how events would fall out during the following thirty-five years, the logic of the argument seems clear enough, but at the time both the government and a large part of the military establishment could see all sorts of reasons why this pattern of a general staff was not appropriate for Britain. In fact this issue was to generate some of the bitterest arguments — within the War Office, between the War Office and the government of India, and particularly between the army and the navy — of the following decade.

The root cause of the problem was a gradual re-focusing of thought, during the last two decades of the nineteenth century and the first decade of the twentieth century, about the way that the army should address its priorities. These were the years during which the issues which arose between the 'blue water' and the 'continentalist' schools — how best to secure imperial defence; whether the navy alone could defend the country against invasion; whether or not the army must be ready to intervene directly on the continent; the relationship between the War Office and the government of India when it came to deploying the forces of the sub-continent; whether the very existence of a military planning function must lead to a war which politicians would be unable to prevent or control — came to a head. Until these arguments could be resolved, if not reconciled, it proved impossible to give the army a structure which would support a British general staff.

Given the strength of feeling on all sides, it is to the credit of those involved that the short reign of Edward VII did produce the necessary decisions, and that, when the long

¹⁰⁹ Cited by Wilkinson, *The Brain*, 39.

period of peace on the continent was shattered in 1914, the country was as well prepared as its unique institutions could allow. The British army then learned that it still had many agonising changes to make, but at least it had been accepted that the army had a rôle to play in fighting on the continent; there was a structure which could provide a small but effective expeditionary force immediately; and the army (and indeed the empire) had been given a general staff.¹¹⁰

In 1880, however, the issues had not yet been clearly defined, and so could not be resolved. Soldiers like the Brackenburys might look wistfully at the neatness and precision of the Prussian system, based on the two pillars of an army permanently constituted in self-sufficient army corps and with a controlling general staff, but the political establishment was not yet prepared to address the difficulties involved in establishing either. Cardwell's memorandum of 1872 summed up the reasons for not accepting the corps structure as follows.

The Prussian system of separate *corps d'armée* is inapplicable in England, for many obvious reasons, such as —

1. That we have no conscription.
2. That our population is migratory.
3. That half our army is always in India, Malta, Gibraltar, &c.
4. That we have no co-terminous enemy.
5. That if we made a foreign expedition, it would not be in *corps d'armée* by rail, but our Army must first assemble at a port of departure, and then be carried by ship to a new port as its future base.
6. That in this country our distances are small, and our internal communications equal to any possible emergency.
7. That our garrisons are almost all round London, Dublin and the great arsenals.
8. That we must, in case of danger, concentrate large forces in one place, and be prepared to throw them wherever the danger might appear.
9. That it would be inexpedient, under a voluntary system, that in any campaign all the glory, or all the suffering, as the case might be, should fall upon the population of any particular district.
10. That the cost of providing buildings for separate *corps d'armée* on the Prussian system would be enormous, and is uncalled for.

No attempt, therefore, has been made to attain to the Prussian system in this respect.¹¹¹

¹¹⁰ The first six essays in French and Holden Reid, *The British General Staff*, and Gooch, John, *The Prospect of War*, (London, Cass, 1981), chs. 1-5, analyse all these issues in detail.

¹¹¹ Cardwell, PRO WO 147/53/1, 14.

Cardwell was here talking specifically about the matter of organising the army into corps, but his note also demonstrates the prevailing attitude about how the army should approach its tasks — the clear implication that a British field force, whether menaced by an invader or embarking on a foreign expedition, could be confronted by such a variety of possible scenarios that it was neither possible nor necessary to have a structure in place charged with the task of preparing an operational plan in anticipation, or an army trained to fight in a particular way. Inevitably, ministers' thoughts were chiefly directed to the regularly recurring calls for actual military intervention in the colonies, and for such activities their view was that the role of the staff was to provide administrative and logistical support rather than operational thought. Accordingly, they saw no justification for a general staff on the Prussian model.¹¹²

This unwillingness of ministers, particularly among Cardwell's Liberal successors as Secretary for War, to accept the concept would continue for the rest of the century. The report of the Hartington Commission in 1890, clearly reflecting the influence of Henry Brackenbury, in words highly reminiscent of those of his brother quoted on page 161, strongly advocated the establishment of a General Staff.

We are informed that in the military systems of all the great Powers of Europe there is a special Department of the Chief of the Staff, freed from all executive functions, and charged with the responsible duty of preparing plans of military operations, collecting and co-ordinating information of all kinds, and generally tendering advice upon all matters of organisation and the preparation of the army for war. We consider that by the creation of such a central organising department, the military defence of the Empire would be considered as a whole, and its requirements dealt with in accordance with a definite and harmonious plan.¹¹³

The report was endorsed by the incumbent Secretary for War, WH Smith, but, crucially, Henry Campbell-Bannerman, his Liberal counterpart (who had held the office in Gladstone's third Administration, and would do so again in 1892), strongly dissented, in traditional fashion.

It is true that in continental countries there exists such a department as is here described. But these countries differ fundamentally from Great

¹¹² Strachan, 'The British Army, its General Staff and the Continental Commitment 1904-14', ch.5 in *The British General Staff*, 87.

¹¹³ Report of Hartington Commission. PP 1890, Cd 5979, vol.XIX, 71.

Britain in the constitution of their Army, and of its government, as well as in the purposes for which it is maintained. They are constantly, and necessarily, concerned in watching the military condition of their neighbours, in detecting points of weakness and strength, and in planning possible operations in possible wars against them. But in this country there is in truth no room for 'general military policy' in this larger and more ambitious sense of the phrase. We have no designs against our European neighbours. Indian 'military policy' will be settled in India itself, and not in Pall Mall.¹¹⁴

For the time being nothing was done. James Grierson described the inevitable results in a letter to Lord Stamfordham from Pretoria, where he was serving as Roberts's Quartermaster General, in July 1900, which sums up so many of the issues with which this chapter has been concerned.

What a lot we have to learn from this war in every way! I think our first lesson is that we must have big annual manoeuvres and have our staffs properly trained. We don't seem to grasp anything higher than a division. And we must have 'staff journeys' to teach the control of armies in the field. If we take the field with a force the size of this one against an European enemy and continue in our present happy-go-lucky style of staffing and staff work we shall come to most awful grief. There is no system about it, and without a system a large army cannot be properly handled.¹¹⁵

It was the system which was lacking; and there could be no system until there was a far clearer agreement about what the chief priorities were.

Doctrine

To British soldiers of the time, and to many since, system was precisely what the Prussian structure gave. They believed that it derived from the powerful direction given by the Prussian General Staff, and that this helped the Prussian (and German) army to develop a coherent doctrine. The validity of their judgment has recently been challenged in two respects. Professor Strachan has argued that '(t)he status of the General Staff within Wilhelmine Germany has been much exaggerated', and that in any case they were

¹¹⁴ Ibid, Dissenting report. It is ironic that when Haldane was successfully urging the creation of a General Staff, in the aftermath of the Boer War, the Prime Minister he had to persuade was Campbell-Bannerman.

¹¹⁵ Quoted in Macdiarmid, 271.

not concerned to promulgate doctrine; ‘ doctrine was not the German General Staff’s method of instruction: it taught by way of concrete examples’.¹¹⁶

With regard to the first of these propositions, it can be argued that, while it took the elder Moltke some years to assert the primacy of the General Staff over the War Ministry, progressively thereafter he and his successors, Waldersee, Schlieffen, the younger Moltke and finally Hindenburg and Ludendorff, established their control, not just of German foreign policy but eventually over the monarchy itself. At all events British soldiers, from 1870 onwards, certainly saw the Prussian military system, if not the whole state, as one monolithic structure organised with such efficiency that a coherent military doctrine could be taught and understood by all.

As to the second proposition, there was a great deal of respect in British military circles for the practical way that the Prussians planted their doctrine throughout the whole German army by such a method that it would lead to the desired unity of purpose — precisely by the wise and constant use of historical examples to train the leaders to react appropriately to the problems which they were likely to encounter in war. As a current instructor at the Joint Services Command and Staff College recently described it, ‘(t)his operational doctrine was based upon what most observers saw as Germany’s traditional approach to war as demonstrated by Moltke the Elder in the Wars of Unification. It consisted of defeating an enemy in rapid, mobile campaigns — *Bewegungskrieg*.’¹¹⁷ The problem for the British, as summarised in the words of Campbell-Bannerman quoted on page 164, was that they had so much wider a range of possibilities to deal with, because of the width of the bounds of empire and the diversity of challenges this could present. Accordingly, they could not hope to lay down a doctrine for fighting a particular type of campaign, as Germany or France could; but in default what they could offer were principles, which, it was hoped, could be applied to any military situation.

However, it would be wrong to suggest that these principles were taught solely, or even mainly, in some abstract conceptual way. The great British military textbook of the

¹¹⁶ Strachan, ch. 5 in *The British General Staff*, 87.

¹¹⁷ Foley, Dr. Robert, ‘Attrition: Its Theory and Application in German Strategy, 1880-1916, (unpublished PhD thesis, King’s College, London University, 1999), 59.

era, Hamley's *Operations of War*, has its 'Jominian' moments, but every section of the work is copiously illustrated by examples drawn from recent campaigns, and emphasises how crucial it is that the principles should be learnt from studying the examples of their application. This is a typical passage.

The principles dealt with in this chapter are few in number, and are put forward merely as a foundation to build on; and yet it is probably not too much to say that they lie at the root of all methods that have been successfully employed in war. If we study closely the battles of great commanders we find the truth of this assertion fully established What, for example, were the main causes of the Japanese success and the Russian failure in the battles of Manchuria?¹¹⁸

Previous chapters have demonstrated that the leaders of the debates, among them the Chesneys and the Brackenburys, larded their articles and lectures with examples from the same wars that their continental contemporaries studied, while Lonsdale Hale, that supreme pedant, devoted all his formidable energies to the minute analysis of the Franco-German War — and Wolseley's letter quoted on page 51 shows that some senior officers, at least, appreciated the value of studying these campaigns on the ground. Maurice was another to lay stress on the importance of learning leadership principles from the continental wars, and Henderson's biography of Stonewall Jackson, probably the finest piece of British military writing of the last half of the century, was expressly designed to show the qualities of leadership in practice. The reasons why the British army continued to lack that unity of purpose and understanding so regularly demonstrated by their German contemporaries should not, then, be ascribed to any fundamental difference in the way that the principles of their profession were presented to them. They must be looked for in the structure of the forces, and particularly in the lack of a mechanism for ensuring that good ideas and necessary changes were not just accepted in principle but put into practice throughout the army. The importance of this will be addressed in the next chapter, which looks at the application in the field of the lessons arising from the continental wars.

¹¹⁸ Hamley, 415. This passage is from the 6th edition of 1907, in which a complete new Part VI, devoted entirely to the lessons of the Russo-Japanese War, has been added by General Kiggell in order to bring it up to date, using the most recent examples available.

Chapter three looked at the impact of technological advances on weapons, logistics and communications. It is now time to examine what British soldiers had to take into account when debating how these tools of the military trade could be put to use most effectively. This chapter will therefore pick up where chapter four left off, and consider the issues relating to how the army should fight. This will involve looking at the tactical changes which the technological advances made necessary, the training and education of officers to equip them to manage and lead the components of the army, and the extent to which the whole force was made an effective instrument. Some of the organisational questions which were considered in chapter four will come into the discussion once again, but only in so far as they had a bearing on creating the necessary conditions to make effective command possible.

British soldiers who studied continental armies could see that this last quality was distilled from a body of doctrine, and this presented British soldiers with a problem. ‘Doctrine’ was not a word with which the British military establishment of the time was particularly comfortable. Professor Holden Reid, writing about the ‘.... doctrinal vacuum that the British army has tolerated until very recently’, has pointed out the distinction which has to be made between doctrine and military theory. For elements of theory to become matters of doctrine they have to gain corporate acceptance. ‘Furthermore, doctrine is endorsed by the Army Board and not just by special interest groups’.¹ In the British army of the 1860s and 1870s, where the constituent parts of higher formations were constantly changing, and where soldiers served most of their time in small garrisons dispersed around the empire, the organisation for developing and refining a body of doctrine, so defined, simply did not exist. The word ‘practice’ was a comfortable and less prescriptive alternative, as Spenser Wilkinson demonstrated in a passage describing the

¹ Holden Reid, Brian, *Studies in British Military Thought: Debates with Fuller and Liddell Hart* (Lincoln, Nebraska, University of Nebraska Press, 1998), 1. It is tempting to add a third category, dogma, to cover matters of doctrine that have become so entrenched that they must never be questioned; the French attitude to the offensive, before 1914, for example.

operation of the Prussian Great General Staff, and the relationship between theory and practice.

Before there can be a good practice there must be a true theory, and a true theory can be acquired only from historical study pursued according to a sound method. Moreover, the theory can never have an independent existence; it must always derive its sustenance from fresh contact, with the historical reality of which it is the abstract.²

Within the British service there was no shortage of theories, and of established practices at regimental level, but a mechanism for creating and then maintaining a strategic doctrine for the army was lacking, so when this chapter talks of doctrine at a higher-leadership level it will generally be referring to what British military men perceived foreign thinkers to have established, and which they hoped or feared might *become* part of a body of British doctrine. Occasionally what they were absorbing from the theorists was not in fact so thoroughly practised by the continental professionals as appeared on the surface — as will be seen in the case of the resurgence of the doctrine of the offensive, and also when the advantages of a permanent structure of army corps were being canvassed.

In November 1872 Colonel Wolseley, still new in his appointment in the Adjutant-General's department, wrote an article about the army's recently completed autumn manoeuvres. His object, he said, was

.... to let John Bull know frankly the opinion of a large class of military men as to the shortcomings of our army, when viewed as a machine for the purposes for which all armies exist. They are not original, being shared by the thinking men in every well-instructed foreign army, and by the great bulk of our rising officers.³

Wolseley had less direct experience of continental armies than many of the other rising officers, but he was in no doubt about the need for fundamental changes in the way that the British army was organised and led. Luvaas has argued persuasively that both Wolseley and his friend MacDougall were not so much influenced by the newly fashionable enthusiasm for all things Prussian as by their experience of the revitalisation

² Wilkinson, Spenser, *The Brain of an Army*, New ed. (London, Constable, 1895), 181.

³ Wolseley, 'Our autumn manoeuvres', 627.

of the Canadian Militia,⁴ but it was the climate created by the Franco-German War which made talk of major reform at least tolerable to the establishment at home. The fact that autumn manoeuvres on a respectable scale were taking place at all was a step in the right direction, but analysis of the performance of those involved raised basic questions. 'First, the fitness of our executive system to the requirements of modern war, as well as the manner in which that system has been carried out; second, the fitness of our administrative system for the purpose of feeding and of otherwise supplying the wants of our army during war'.⁵

Wolseley's critical observations on the executive shortcomings exposed by the manoeuvres were, as ever, pungent — particularly on the necessity for professional education (accompanied by the removal from command of those aged generals who could not demonstrate their understanding of the requirements of modern warfare), the disastrous consequences of perpetuating obsolete formations, the value of allowing staff officers to practise their functions, the opportunities for all ranks to get to know and value one another, and the benefits of keeping all those involved informed of the objectives. It is disappointing, therefore, that his second objective, to question the administrative functions, concentrated entirely on condemning the perpetuation of dual control, arising from the way that the Control Department was allowed to function, because that left no room for what could have been valuable comments about the need for the integration of all the forces into a practicable plan for mobilisation and deployment.

Whenever issues relating to leadership were debated in the British army two underlying themes heavily influenced discussion. The first related to opportunities for officers to practise the skills necessary for leadership in war by handling troops in large numbers. As Wolseley pointed out in the article quoted, large-scale manoeuvres drew attention to what was lacking; that would always be painful, but without such exposure nothing could be done to develop sound doctrine. This was the way of the reformers. The

⁴ Luvaas, *The Education of an Army*, 120-1.

⁵ Wolseley, 'Our autumn manoeuvres', 627.

other issue, which tended to pull in the opposite direction, was more insidious, not least because it was, and remains, in some ways a great strength of the British military system. The power of the British regimental culture, nurtured by a system involving the regular rotation of units of this size to stations separated by vast distances, within which larger formations tended to be formed only on a temporary basis to meet a particular need, was always a brake on any doctrinal innovation which might threaten it — a continuing attitude of mind vividly described by Holden Reid in his analysis of a later period of doctrinal change.⁶ Commentators who wanted to stimulate the pace of reform drew attention to the inherent danger of this inward-looking attitude throughout the period, but could not hope to eliminate it.⁷

Training and education

Two of the forces which shaped Victorian society were its relish for the benefits of material progress and its faith in the perfectibility of man. Both these forces encouraged a lively interest in improving the educational attainments of the country at large. For the masses, a higher level of literacy and numeracy would produce a more skilled and contented workforce, as well as a morally enriched society. At more privileged levels the establishment of measurable qualifications for entry into the learned professions and the public service would lead to an improvement in standards of competence and probity, which would be as useful as it was admirable.⁸

In recent years historians, particularly Professors Bond and Strachan, have shown that the minds of the leaders of the Victorian army were not immune to similar sentiments, and that some positive steps were taken to respond appropriately, by introducing schemes to improve the educational level of the rank and file and the professional skills of the officers.⁹ Indeed, the interest of leading soldiers was more

⁶ Holden Reid, Brian, *Studies in British Military Thought*, 9-10.

⁷ See, for instance, Galton, 'The military forces', 225-6, and Griffiths, Arthur, *The English Army: Its Past History, Present Condition, and Future Prospects* (London, Cassell Petter and Galpin, 1878), ch.9, 235-47.

⁸ Bond, BJ, *The Victorian Army and the Staff College, 1854-1914* (London, Eyre Methuen, 1972), 26.

⁹ *Ibid*, particularly 25-7. Strachan, H, *Wellington's Legacy*, chs. 3 and 4.

sharply focused than that of their civilian colleagues. Whereas society in general saw little need to involve what might be happening elsewhere in the debate, the army could not afford to neglect the impact of increasing levels of professional competence in the ranks of its European rivals.

The educational level of the rank and file was a continuing matter for concern, but in a peculiarly British way. It was acknowledged that continental armies, recruited by conscription, benefited from receiving into their ranks a reasonable cross-section of the population, whereas the voluntarily enlisted British army tended to attract only the lowest levels of society. One corollary of this, that continental armies therefore contained better NCO material, was accepted, but scarcely worried about. In default of any possibility of filling the ranks by conscription, the issue was mainly one of numbers. The perennial shortage of recruits could only be overcome if the quality of the soldier's life were made more attractive to decent men, and this entailed the improvement of all their terms of service, including pay, living conditions and respect for the individual. Success in achieving these goals was to prove slow at best, depending as it did on persuading reluctant ministers to part with additional funding, and the difficulty in finding enough recruits continued to be a problem. Their quality was also a concern, but this was more to do with their physique than their education, as the children of the industrial slums took the places previously filled by stout country lads.

The education of officers was a different matter. The robust belief that an English gentleman's education fitted him to take on any responsibility that life could throw at him, particularly that of leading men in battle (or governing the inhabitants of 'less happier lands'), runs as a constant theme throughout all the arguments of the period.¹⁰ At the same time, the value of the Royal Military College at Sandhurst, as one method of entry to commissioned service for the infantry and cavalry, and the Royal Military Academy at Woolwich, as the only route to entry to the Royal Artillery and Engineers, was also generally accepted. Two articles which appeared in the early months of 1860 illustrate the apposition of these two themes.

¹⁰ Mandat-Grancey thought this to be one of the British army's greatest strengths. *L'Armée anglaise*, 43.

One, in the April edition of *Fraser's Magazine*, examined the situation in the French army to argue that it was necessary for officers to start their careers with specialised instruction in their profession if they were to be adequately equipped to progress to senior ranks. The higher echelons of the French army were filled by the graduates of St. Cyr and L'Ecole d'Application d'Etat Major, but the other half of the officer corps, which had been commissioned from the ranks, seldom rose above the rank of captain. While this was a strong argument for expanding and improving Sandhurst, there was reason to take comfort from the fact that *every* British officer had the advantage of being a gentleman. The other article appeared in the *United Service Magazine* in January. Its focus was on the Staff College, newly created from the Senior Department at Sandhurst. It acknowledged that specialised training was of some benefit in equipping officers for staff duties, but the dangers inherent in too much study were spelled out in a telling quotation from some remarks made there by the Duke of Cambridge.

The question of education is one of very considerable difficulty: we all desire to see it carried to the highest possible pitch, so that the education does not reach a point where it could destroy efficiency. Your mere bookworm is a very reputable person in his way, but he is not altogether the man you want for a staff officer.¹¹

At this stage, when the French were still the perceived leaders in the military field, the debate about the educational requirements of officers continued to be entangled with the vexed question of purchase. So long as a majority of the officer class had either entered the army or at least advanced in it by this means, there was a powerful conservative resistance to any serious proposals to make intellectual attainments of a specifically professional kind the criteria for selection or promotion. Opposed to them were those who thought that they could see in the French army the advantages of a career open to the talents, permitting the most able to rise to the highest positions on merit. Sir Charles Trevelyan exemplified this approach when he wrote on *The British army in 1868*.¹² Military competence, he said, could be gained by two sorts of experience, and these should offer the only two methods for gaining admission to commissioned rank; by competitive entry through a military college or by promotion from the ranks; and of the

¹¹ Anon., 'A few words on military education and the Staff College', *USM*, 1860, pt. 1, 71-5, 71.

¹² Trevelyan, Sir Charles, *The British army in 1868*, (London, Longmans Green, 1868).

two he considered the second the more advantageous. The Austrian, Prussian and Russian armies all had a system for bringing selected cadets through a course of training in the ranks before commissioning, but he preferred the French system of simply selecting the best of the non-commissioned officers for promotion, since this ‘ extends the choice of officers to the whole army,’.¹³

Douglas Galton approved of many of Sir Charles’s proposals for reforming the army, but on this last issue his preference was for the cadet system, similar to that by which midshipmen were trained in the navy.¹⁴ He was writing in January 1871, and by then Prussia had supplanted France as the focus of admiration. It is no surprise, therefore to see his insistence that the training of officers and men ‘ for their real duty, War ... should be taught by exercising the troops to some extent in campaigns on the Prussian principle, when the real qualities of officers and men are developed’.¹⁵ Lieut.-Colonel Bray emphasised the same points in a debate at the *RAI* that February (1871); taken all round British officers, because of their liberal education, their love of vigorous sport and their opportunities for foreign travel, were excellent material — but professionally they were untaught. His opportunity to see the Prussian manoeuvres in 1868 had taught him more than ‘ many years of peace training in the British army’.¹⁶ He did not see many things worth copying ‘ but the one very important point in which they were decidedly superior to us was, in the TRAINING OF THEIR OFFICERS’.¹⁷ The lively debate which followed related largely to the reasons why manoeuvres were not used regularly for similar training in the British army, and this crucial issue will be picked up later in the chapter.

The value of the superior education of Prussian officers made a similarly powerful impact on the Secretary of State. Cardwell declared that ‘ if there is one lesson which we have learned from the history of the late campaign, it is this — that the secret of

¹³ Ibid, 11. For a fierce professional condemnation of Trevelyan’s opinion, see MacDougall, ‘Army reform’, *Blackwood’s*, vol.128, Nov. 1880, 561.

¹⁴ Galton, ‘Military Forces’, 227.

¹⁵ Ibid, 230.

¹⁶ Bray, ‘The Prussian mode of conducting large manoeuvres’, 348.

¹⁷ Ibid, 349. The emphasis is that of the editor of *Proc RAI*.

Prussia's success has been more owing to the professional education of the officers than to any other cause to which it can be ascribed.'¹⁸ This was no idle judgment. A Military Education Commission had been set up in 1868 under the guidance of Lord Northbrook, and its reports were heavily influenced by the most detailed study of arrangements within the armies of Europe.¹⁹ In addition to long reports from the various British military attachés, the Secretary of the Commission, John Hozier, had been sent to Paris and Berlin to collect additional material, and these papers make up a large part of the three hundred and seventy-nine pages of the Commission's proceedings.

The debate which Captain Tulloch (one of a new breed of Garrison Instructors) led at RUSI in June 1873, on 'The education and professional instruction of officers', has to be set in contrast.²⁰ It gives a suggestive insight into contemporary views about the relative merits of the education to be had at Sandhurst and the public schools, relating both to the opportunities for teaching young officers their professional duties within their own regiments, but the references to the situation in other armies serve chiefly to show why the participants felt that the British situation was so different.²¹ At this level it was hard to generate the kind of explosive interest in the subject which could lead to a change in the culture. Why, officers asked, should they be expected to sit at their studies instead of getting on with practical soldiering with their regiments?

The answer was obvious, at least to those soldiers who were impressed by the growing professionalism within the continental armies. The ability to use the resources of a modern army, the sheer numbers as well as the complicated technologies, could only be gained by leaders who had both studied the techniques and practised them regularly. As James Grierson, probably the brightest of the young subalterns at the end of this period — and already an enthusiastic student of continental armies — put it,

¹⁸ Biddulph, R, *Lord Cardwell at the War Office*, (London, Murray, 1904), 117.

¹⁹ HC 1870, vol.xxv, 223-602.

²⁰ Tulloch, Captain AB, 'The education, and professional instruction of officers', *JRUSI*, vol. 17, 1874, 759-85.

²¹ For example, Howard Vincent's comments, *ibid*, 782. Vincent's opinions, though he was only a twenty-three year old subaltern at the time, are not to be despised. He had already produced a succinct and insightful 'Brief sketch of the system of officering the Prussian army', *JRUSI*, vol.16, 1872, 796-8.

(u)ntil the great body of British officers becomes convinced that the days of playing at soldiers are over, and that *work* and work in the fullest sense of the word, must now be the watchword, we despair of any attempt at re-organisation. By work we do not mean the daily duty, which is carried out with the greatest conscientiousness by British Officers — in no army with more — but study, hard study, which must be encouraged and fostered in every way by the authorities.²²

The purpose of the re-organisation which Grierson was advocating would be to provide the opportunity for soldiers, the leaders and the led, to become familiar, as a matter of course, with the practical skills involved in fighting under conditions approaching reality *before* they were exposed to the shock of actual war.

Manoeuvres and *Kriegspiel*

The *Field Exercise and Evolutions of Infantry* issued by the Adjutant-General in 1859, to which General Officers were required to give ‘the most scrupulous adherence’, describe in great detail how units up to brigade level are to carry out their drills on the parade ground, on the march and in review. They mention, in part V, that when great bodies of troops are brought together the brigades will be formed into divisions and the divisions into wings or *corps d’armée*, but the instruction to such higher formations is confined to the coordination of the movements of the brigades in close order. Nothing is said about the possibility of exercising divisions or corps against one another in simulated warfare; an omission which reflects the fact that no such manoeuvres had been carried out in England since 1853.

Many critics of the General Commanding-in-Chief attribute this to the innate conservatism and regimental tribalism of the military establishment. These critics saw an establishment content, even complacent, with a system which had worked in the Peninsula, and which was now obsessed with the details of colourful uniforms, grand parades and field days which were more *fêtes champêtres* than rehearsals for war.

²² Cited by Macdiarmid, *Grierson*, 30-1, quoting an article which Grierson wrote for the *Indian Pioneer* in 1881. The German origin of this guiding principle can be seen in a diary entry of Grierson’s, *ibid*, 90.

Prince George shared with his Queen a dislike for change, and maintained a steady opposition to all military reforms. He laboured hard to keep the army as it was under the Duke of Wellington. Full of reactionary dogma, parade drills were his most delightful chore, and extravagant field days his pleasure.²³

Thus Joseph Lehmann in his biography of Wolseley; and Edward Spiers says much the same. 'He regarded the efficiency of the army as proven by its wartime successes and by the turn-outs at the endless round of field days and parades which he personally inspected'.²⁴ But is this a fair judgment? There is plenty of evidence to show that, in addition to his abiding interest in the minutiae of regimental turn-outs, the Duke of Cambridge took a keen professional interest in the annual manoeuvres of continental armies, and did all that he could to introduce the same at home — and that he repeatedly proposed the fundamental changes in the army's structure which should be introduced in order to make such exercises work.

For Cambridge the story may be said to have started in 1852. Newly appointed Inspecting General of Cavalry, he addressed a long memorandum to Lord Hardinge, the Commander-in-Chief, in December 1852, saying that Britain must reform the army along the same lines as every continental army, by establishing a system of permanent brigades and divisions, incorporating 'a due admixture of the three several arms of the service', and integrating Militia regiments into these divisions. A crucial part of his proposal was the making of a provision for their regular training under operational conditions; '.... means may be found for periodical concentrations of a portion at least of these bodies of troops, say a Division annually, where officers and men may have an opportunity of really learning their duties in combined bodies'²⁵

A month after the delivery of this memorandum the Secretary at War, Sidney Herbert, had agreed to the inclusion of a vote to cover the necessary expenditure in the army Estimates, and Hardinge had set about the arrangements which would lead to the

²³ Lehmann, Joseph, *All Sir Garnet* (London, Cape, 1964), 161.

²⁴ Spiers, Edward, *The Oxford History of the British Army*, 191.

²⁵ Cambridge to Hardinge, December 1852. Quoted in Verner, vol.1, 39-44.

establishment of a camp of exercise to train nearly 18,000 men for two months at Chobham, starting in June 1853.

Professor Strachan has pointed out that Hardinge subsequently said that the Prince Consort was entitled to the main credit for this initiative, but Cambridge's enthusiasm for the project was duly acknowledged when he was given a prominent role in commanding half the forces involved.²⁶

The Crimean War now intervened, attention was further distracted by the Mutiny and a war in China, and the Chobham experiment was not repeated. However, Cambridge's determination to study the benefits of large-scale manoeuvres had not diminished. In August 1860, now General Commanding-in-Chief, he wrote to Lord Cowley, the British ambassador in Paris, to say how anxious he was to learn the results of the cavalry manoeuvres which were to be held in the camp at Châlons. While he was sure that Claremont could produce a satisfactory report on his own, he felt that it would be more fruitful to send over a specialist, the Assistant Adjutant-General of cavalry, if Cowley could arrange for his reception.²⁷

Professional attendance of this kind at foreign manoeuvres, by home-based officers sent to supplement the observations of the military attachés, continued at an increasing pace throughout the 1860s, and on the whole the soldiers who went were deeply impressed by what they saw. One of the officers who had attended the autumn manoeuvres of the Second Corps of the army of the North German Confederation in 1869 was so '.... struck with the instructive character of the Exercises' that he quickly published an English translation of *Extracts from the Prussian Orders for Conducting Large Manoeuvres*. His preface starts with an interesting observation.

The practice of Sham Fights having been recently introduced into our Garrisons and Camps of Instruction, with the good result of exciting the interest of both officers and men in the duties of their profession, I have

²⁶ Strachan, *The Reform*, 165-70. An interesting and detailed account of the Camp can be seen in Armstrong, E, 'Chobham Camp, 1853, by Edward Matthew Ward', *Journal of the Society for Army Historical Research*, vol. 81, 2003, 87-95.

²⁷ Cambridge to Cowley, 2 August 1860. Clarendon Papers, PRO FO 519/178.

been induced to attempt the translation of some of the Orders on the subject that have been issued to the Prussian Army.²⁸

This makes clear that the British army of 1870 was not entirely deprived of opportunities to practise manoeuvring against an opponent. Indeed, Charles Brackenbury's lecture at the RAI in December (which provides the exhortation quoted at the beginning of this study) started by describing the shortcomings exposed by the autumn manoeuvres at Aldershot in 1869.²⁹

Why, then, was it so important to learn from the continent? Because, he said, an army could only learn by doing, and sham fights between small numbers of infantry or cavalry alone were neither big enough nor sufficiently embracing of all arms to provide the necessary opportunities to learn about the realities of tactics, supply or staff work and intelligence. The trouble with Aldershot was that it was so cramped that one soon got to know every blade of grass. All the major European armies enjoyed grander facilities, but the elaborate autumn manoeuvres of the Prussians and Russians were freer and more realistic than the set-piece evolutions practised by the French (the Austrians falling somewhere between the two patterns), and he strongly favoured the Prussian model, because this showed how it was possible to learn in peacetime how to fight a war.

Lord Elcho, MP, a powerful voice and a good friend of Brackenbury's, said the same.

Whoever has had the good fortune to be present at the Prussian Autumnal Field Manoeuvres, where separate armies of 20,000 or 30,000 men completely organized, manoeuvre against each other for a fortnight or three weeks together over a wide tract of country without any previously concerted plan, cannot be surprised at the completeness of the field organization of the Prussian Army, and at the aptitude for war shown by all departments and members of the Service. War to them simply means shotted, instead of unshotted guns. Contrast training such as this with that which up to a very recent date, our own Army has been in the habit of

²⁸ Milligan, Captain C, tr., *Extracts from the Prussian Orders for Conducting Large Manoeuvres* (London, W Mitchell, April 1870), Preface.

²⁹ Brackenbury, CB, 'Autumn manoeuvres', 45-65.

receiving at Aldershot which is supposed our Military School for field operations.³⁰

The events of that summer of 1870 had already done much to drive this message home to the thinking public. The *Pall Mall Gazette*, in one of its many analytical articles on the campaign in France, said that it was now generally recognised that the use of regular manoeuvres, ‘ as real as the absence of ball cartridge and of an actual enemy will permit’, was one of the most important contributors to the continuing triumph of Prussian arms.³¹ In November Cambridge returned to the charge, addressing a long memorandum to the Secretary of State repeating the main proposals for reorganising the structure of the army which he had put forward previously.³² He explained the urgency succinctly;

I feel firmly convinced that the magnificent and complete organisation of the Prussian or German Army will in no respect be modified or reduced after the conclusion of the war, but will be maintained in its full power of development at the shortest notice, and it consequently becomes necessary for all other Powers who are anxious to maintain their independent position amongst the nations of the world to adapt their organisation as far as possible to the Prussian model.

To complete the views I have advocated in this memo. it will be desirable, not to say necessary, with a view to attaining efficiency, to have annual concentrations of the Army, Militia, and , when possible, of the Volunteers, in smaller or larger bodies, as it may be found possible or desirable to arrange such concentrations.

That they are essential to the efficiency of an Army has been fully found by the admirable results they have produced in the German Armies; and indeed no real or sound organisation is possible in which such concentrations do not form a leading feature in the general arrangements.

It was against this background that the lecture and debate led by Lieut.-Colonel Bray at the RAI on 2 February 1871 took place. Bray’s enthusiastic assessment of the value of the Prussian system has already been quoted.³³ In the subsequent discussion

³⁰ Elcho, Lord, *Letters on Military Organization* (London, Murray, 1871), Letter III, written on 19 August 1870, 10.

³¹ *Pall Mall Gazette*, 23 August 1870, 1.

³² The memo. is quoted in its entirety in *Verner*, vol. 2, ch. 21, 38-44. It is difficult to understand how anyone who has read the correspondence quoted in that chapter, including an exchange of letters between Cambridge and the Queen’s Private Secretary on the same issue, can have reached the conclusion expressed by Lehmann, quoted on page 177.

³³ Bray, ‘The Prussian mode of conducting large manoeuvres’. See page 174.

Major-General Simmons's powerful contribution made several important points. One of the commonest objections to holding large-scale manoeuvres in Britain was always the difficulty of getting access to suitable land in a heavily cultivated and privately owned countryside. These difficulties, he maintained, were much exaggerated and were capable of being overcome; the true problem was to persuade ministers to accept the cost involved, a type of advocacy for which, he felt, soldiers were not well fitted. This was particularly regrettable for another reason. Moltke had shown how the thorough testing of senior officers in large manoeuvres enabled him to select the ablest to lead the army in battle.³⁴

In actual fact Simmons had underestimated the persuasive powers of the military establishment, since the principle had already been accepted. The formal War Office meetings which Cardwell established in 1870 had begun to record their decisions, and these show that the plans which were being made for more elaborate manoeuvres in 1871 were intended to take due note of the Prussian model. The Minute of the meeting of Monday, 24 July 1871 records, among the rest of the detail about arrangements, that 'Sir H Storks read a statement of the mode in which the Prussians took the field on the occasions of these manoeuvres',³⁵ and an official version of the Prussian Regulations was issued.³⁶

The manoeuvres duly took place in the new style, in both 1871 and 1872, and the performance of the participants gave rise to a great deal of critical analysis, from professional soldiers, politicians and commentators alike. While the opportunity to air the grave deficiencies which continued to confront the army could not be resisted by ardent reformers, exemplified by Wolseley's comments at the beginning of this chapter, the general verdict about their value was favourable. There was much criticism of some

³⁴ Ibid, 363-4 and 365.

³⁵ Decisions of War Office Meetings, Monday, 24 July 1871. PRO WO 163/1. The Minute for 16 March 1872 refers to the circulation of a report on the Austrian manoeuvres, and that for 30 May 1872 instructs 'Captain Wilson to prepare a report showing the general principles upon which the manoeuvres in Prussia are conducted'.

³⁶ Baring, Lieut. E, tr., *Regulations for the Training of Troops for Service in the Field, and for the Conduct of Peace Manoeuvres*, translated from the German at the Topographical and Statistical Department (London, HMSO, 1871).

details, but Charles Brackenbury 's pleasure in the progress being made seems to have met with the general agreement of his colleagues.

But who that remembers the condition of the Army as to organization, education, and practical training in 1866, can look on 1872 without a thrill of pleasure and joyful confidence in the future? Even as late as 1869 the manoeuvres at Aldershot, though already a visible enemy in some force had been introduced upon the field, were still little adapted to the requirements of modern armaments.³⁷

Within the Royal Artillery, in particular, ' the Manoeuvres struck off the fetters of immobility ', by demonstrating that the guns ought to be deployed to suit their own tactical requirements, rather than in strict conformity with the movements of the infantry or cavalry. This necessary recognition of the realities of warfare in the era of rifled breech-loaders was happily endorsed by order of the Commander-in-Chief, and the mobility of the guns was further enhanced by the introduction of seats for gunners on the axle-trees, copying, somewhat belatedly, the standard practice of the Prussian army.³⁸

If the benefits were so obvious, it must be asked why these large manoeuvres were not repeated after 1872. Negative pressures were at work. These fall into two categories, domestic and external. Within the first category, cost once again became a decisive factor, as so often when an immediate threat had safely passed. This was coupled with renewed concerns about the physical difficulties of bringing large bodies of troops together, including additional issues relating to hygiene laws and water supply.³⁹ These were the perennial domestic objections.

The 'external' objections were of two kinds. The first, which Brackenbury referred to as 'the cuckoo cry of the Prusso-phobists', was simply that because Britain's institutions differed from those of Prussia it was axiomatic that there was nothing to be learnt from the ' lessons extracted by Prussia from her last few years of blood and

³⁷ Brackenbury, CB, 'The autumn manoeuvres of 1872', Monday, 20 January 1873, *JRUSI*, vol. 17, 1874, 75.

³⁸ Calwell and Headlam, *The Royal Artillery*, vol.1, 224-6.

³⁹ See the Duke of Cambridge's closing remarks in Chesney, 'The theory and practice of peace manoeuvres, with their relation to real warfare', *JRUSI*, vol.16, 1872, 573.

iron because we were not there fighting ourselves'.⁴⁰ This was blind prejudice, but a more professional objection arose directly from the observation of foreign manoeuvres and their influence on doctrine. An increasing volume of criticism focused on the essential unrealism of even the most apparently lifelike manoeuvres, because in the end the ammunition was blank and the casualties a matter of arbitration rather than fact. This could result in the learning of dangerously false doctrine.

In the early 1860s this criticism of unrealism related to the drill-like formalism which still prevailed,⁴¹ and the proposed remedy at that time was greater freedom rather than abandonment of the idea. From 1870 onwards the danger of learning false lessons became more apparent, and the mainly German professional theorists (whose experience was making so much of an impression on those soldiers who were receptive to foreign ideas) themselves contributed to this process. Hauptmann May was among the first to draw attention to the dangers. His account of the Prussian Infantry in 1869 includes a chapter, on manoeuvre tactics and battle tactics, in which he specifically warns foreign officers that sham fights simply cannot duplicate the time-delays and confusions of real war, and that they may be drawing false lessons from what they see.⁴² Charles Chesney was quick to assimilate the message. At his lecture in July 1872 he said that he had heard the recent Aldershot manoeuvres discussed '.... by many men of different nations and various views'; now he needed to combat fallacies and dispel 'baseless visions'.⁴³ This he did by citing examples from the recent war to show how the realities of fighting had exposed the perils of taking both strategic and tactical doctrines learnt in sham fights onto the battlefield. Even the victorious Germans had not fully grasped this, despite the fact that May and Boguslawski ('.... happily just translated into our own tongue by Colonel Graham, and so brought within the reach of all'), speaking from direct experience of the campaigns of 1866 and 1870, had insisted that the lesson must be learnt.⁴⁴

⁴⁰ Brackenbury, CB, 'Autumn manoeuvres of 1872', 80-1.

⁴¹ See, for instance, Anon, 'Military Studies — no.1: Manoeuvres', *USM*, 1863, part 1, 504-8.

⁴² Ouvry, *The Prussian Infantry*, 74.

⁴³ Chesney, 'Peace manoeuvres', 550.

⁴⁴ *Ibid*, 556.

The latter part of Chesney's lecture was devoted to describing the positive merits of peace manoeuvres, but, bearing in mind that the last words on the subject were those of the Commander-in-Chief, regretfully referring to the growing physical difficulties involved in organising them, those present must have come away with a distinctly negative impression.

In the event, the British army enjoyed no more manoeuvres on this scale until 1895, which will scarcely have surprised those soldiers who were privy to the confidential paper on 'The Army in 1872' which Cardwell wrote in November of that year '.... at Mr. Gladstone's suggestion; the object of it is to exhibit the principal changes which have taken place in the War Department since the present Government came into office'.⁴⁵ While he was unstinting in his praise of the Prussian army, his paper set out all the reasons why so much of their system was not appropriate for Britain — and the argument carrying the strongest ring of sincerity was the enormous cost. However (although he did not put it in quite these words), a low-cost alternative to actual manoeuvres was available. 'The German Kriegs-spiel as a means of giving tactical instruction has been introduced at the following stations'.⁴⁶

Kriegspiel (wargame) was a competitive exercise to train leaders without involving large bodies of men on the ground. It could take the form used by Moltke in his annual Staff Rides, where the players worked out military problems in the open, as in a modern TEWT, but was more generally practised indoors, as in a sand-table exercise. Captain Burnaby firmly favoured the first method, as practiced by the Russians,⁴⁷ but Henry Brackenbury's memoirs relating to 1876 suggest that the version played in Britain was the more sedentary one; '.... I used to go up to London to attend the games of *Kriegspiel*,

⁴⁵ Cardwell, Edward, *The Army in 1872*, PRO WO147/53/1, 1.

⁴⁶ *Ibid*, 20.

⁴⁷ Burnaby, 'Practical instruction', 640. Charles Brackenbury describes the nature of Moltke's 'Staff Journeys' in 'The intelligence duties', 250. Spenser Wilkinson gives a full description of what this involved in his account of the *Uebungsreise* (practice tour) which ended the third year of training at the Prussian Kriegsakademie in *The Brain of an Army*, 168-9.

which were held, I think, weekly⁴⁸

The value of both Staff Rides and organised battlefield tours was appreciated comparatively quickly by the British establishment, and the practical benefits have been apparent ever since. The current Director Operational Capability, Brigadier Mungo Melvin, recently delivered a brilliant lecture on this subject, in which he led up to the present use of both of these instructional tools in the British army by outlining their early history. He cites Brian Bond to show that the Staff College introduced ‘Staff Tours’ in 1895, and credits GFR Henderson with having started overseas battlefield tours when he was Professor of Military History and Tactics at Camberley in 1893.⁴⁹

Despite the lack of large-scale manoeuvres on the continental pattern after 1872, it would be wrong to assume that there were no realistic uses of space to practise military evolutions on a scale wider than the drill square. To take the Royal Artillery as an example, their *History* shows how the experience gained in 1871 and 1872 led to the acquisition and development of sufficient space at Okehampton to allow for ‘ some system of field artillery gun practice such as exists in Germany and Austria ’, and gradually more grounds suitable for live firing followed.⁵⁰ These developments liberated the units concerned, to some extent, from the monotony of the drill square, but they did not provide an opportunity for soldiers, and particularly their officers, to gain that familiarity with the other arms which was such a feature of the successful Prussian army. Worse, they created opportunities for misleading practices to become entrenched in the minds of those who might have to lead men in war.

The Royal Artillery offers a graphic illustration of the danger. Delighted by their release from the constraints of having to conform to the drill movements of the other arms, they relished the chance to develop their mobility, their speed into action and,

⁴⁸ Brackenbury, *Some Memories*, 243.

⁴⁹ Melvin, Mungo, ‘Battlefield tours and Staff Rides: A military practitioner’s view’, *British Commission for Military History Newsletter*, no.12, 20. For an earlier example, however, see Wolseley’s letter on page 48.

⁵⁰ Callwell and Headlam, *The Royal Artillery*, vol. 1, 230-4.

above all, the aggressive spirit. Captain Fox Strangways stressed throughout his lecture at Aldershot in March 1872 that these were some of the qualities which had enabled the German artillery to contribute so strongly to their successes in the recent war, but he was at pains to make the distinction between true and false mobility. Since the objective was to provide effective fire, careful reconnaissance, shrewd choice of ground and accurate shooting were crucial.⁵¹ There was great risk in going for show; for brilliant turn-out and speed for its own sake, at the expense of good shooting — a theme to which he returned in another lecture in 1877.⁵² Ultimately, the attitude of mind which he condemned would contribute to a spectacular débacle, the destruction of Colonel Long's 15 pounder batteries at Colenso — where a failure to reconnoitre the ground and an overweening boldness led to their coming into action unsupported, and within killing range of the Boer riflemen.⁵³

Units accustomed to training only with their own kind might think that they were training in a practical way for war, but the value of what they were learning was much diminished. Conditions were more favourable in India, where the army was not so restricted by geographical constraints. There all arms had frequent opportunities to train together, and to learn the realities of mutual dependence on active service. The trouble was that the military problems which they had to address differed in both pattern and scale from those of Europe, and this had two unfortunate consequences. Some of the operational techniques which young officers saw working well under Indian conditions, such as the merit of boldness in thrusting forward into the body of the enemy forces, however great the numerical odds, and maintaining tightly disciplined formations in the face of swarming opponents, proved to be costly when they tried the same techniques against opponents who were armed and trained to continental standards. Moreover, by comparison with European armies the numbers of troops involved were puny, and there were no opportunities for generals to become accustomed to handling great armies. The

⁵¹ Fox Strangways, 147-9.

⁵² Callwell and Headlam, 232-3.

⁵³ Pakenham, Thomas, *The Boer War*, (London, Weidenfeld and Nicolson, 1979), 279.

home establishment was well aware of this, and that undoubtedly contributed to the general opinion that their experience was at best worthless.⁵⁴

At home attention continued to be focused on the doctrines which were being developed and practised by the continental armies. In discussion the emphasis was on the need for realism in training to fight against a European opponent, and in the years immediately following the Franco-German War the British army undoubtedly made up some lost ground. Through studying and assimilating the teaching of men like May and Boguslawski, Scherff and Kraft, and relating them to what their own observers had seen, they were able to benefit vicariously from the hard-won experience of the combatants. However, while the British army was trying to learn the lessons of 1870, doctrinal theories continued to evolve on the continent, and some of the consequences were ultimately to prove tragic for all concerned. It is important, therefore, to devote a little space here to looking at the significance of these changes.

Since 1859 the armies of Europe and America had been painfully learning what was involved in fighting with the tools and numbers now available. The Prussians in particular had evolved a set of practical doctrines which proved capable of delivering stunning victories, and these were what the rest of the world studied. In contrast, the Balkan campaigns of the late 1870s contributed little. They gave rise to detailed analysis of some aspects of command and leadership, but on the whole observers were not sufficiently impressed by the competence of the generalship or the quality of the troops on both sides to admit that valid lessons could be learnt — unless they happened to confirm existing views. However, as the military theorists continued to pore over the details of the campaigns of 1870 and 1871, and the commanders, to the extent possible, practised the resulting evolutions on manoeuvres, the messages began to change.

The Prussians had won their victories by being aggressive. The analytical thinkers among their soldiers, Moltke himself and the soldiers whom he had trained, were in no

⁵⁴ See Lonsdale Hale's comment quoted on page 195, but for a vigorous condemnation of this attitude, see Maurice, *War*, 94.

doubt that the success of offensive operations depended upon meticulous preparation, accurate intelligence, careful co-operation between all arms, the use of surprise to ensure that they had greater numbers available at the crucial places and times, and above all the avoidance of head-on assaults on defensive positions if there was any possibility of outflanking or encircling the enemy. The emphasis of their doctrine, in fact, had been to exploit the use of the available tools, whether in communications, logistical planning or firepower, to such advantage that when battle was joined the outcome would already be settled in their favour. During the actual fighting, however, things had not always worked out as Moltke would have wished. Intelligence about the enemy was sometimes faulty; generals misunderstood or disobeyed their orders; in the fog of battle officers lost control of their men at critical moments. Yet they consistently won. This led many of the theorists to look more closely at the fighting qualities of the soldiers involved, and to speculate that these were perhaps in the end more important than the technical considerations.

The beaten French had particular reasons to learn from the experience, and their initial reaction was to copy as much as they could from the Germans. This included doing away with the pernicious system of allowing substitutes to take the place of those conscripted into the army, altering the structure of their General Staff to an approximation of the Prussian model, and adopting into their Service Regulations for 1875 the tactical principles which May and Boguslawski had described, emphasising the dominance of firepower on battlefield tactics and the impossibility of moving or fighting in close order under fire.⁵⁵ However, the reorganisation of their regular army following the defeat created a situation which reactionary elements were able to exploit to ensure, for a generation, ‘ that the upper echelons of the officer corps were filled with the scions of aristocratic, anti-republican families’.⁵⁶ Within this body, anxious to demonstrate that they were the true guardians of the national genius, there soon

⁵⁵ See Arnold, Joseph, ‘French tactical doctrine 1870-1914’, *Military Affairs*, vol.42, no.2, April 1978, 61.

⁵⁶ Setzen, Joel, ‘Background to the French failures of August 1914’, *Military Affairs*, vol.42, no.2, April 1978, 87, citing Raoul Girardet, *La Société Militaire dans la France contemporaine* (Paris, Plon, 1953), 186-91, 198.

developed an attitude of mind which began to focus once more on what they saw as the traditional French martial virtue, an irresistible spirit thriving on audacity and dash.

The offensive

These men found evidence from 1870-71, not least from the pen of Charles-Arment du Picq, a French officer who (like May) did not survive the conflict, that in the confusion of battle soldiers of the right mettle could still expect to sweep the opposition aside in a concentrated rush. Selective interpretation of the Balkan campaigns of 1877-8 reinforced this opinion. While Skobelev had described the devastating effects of firepower, Dragomirov favoured the psychological impact of disciplined soldiers in ordered formations; man, he said, was the first instrument of battle; if he stood his ground the battle must be won. The 1884 revision of the French Service Regulations reflected these influences. It played down the effect of firepower in general (though it recognised the potential of the machine gun) and once more laid stress on the moral effects of formed bodies of supports and reserves in deciding the outcome of battle. Gradually, this revival of emphasis on the power of the aggressive spirit to overcome all obstacles hardened into that thorough-going doctrine of the offensive which was to lead to devastating losses, with no discernable benefit, in Lorraine and Alsace in August 1914.⁵⁷

There was much in this emphasis on the spirit to appeal to British soldiers, because it seemed to encapsulate the virtues which had enabled British arms to triumph so often against great odds. Colonel GFR Henderson's collection of essays on *The Science of War*, written in the years embracing the end of the century, shows this clearly. German tactics in 1870 were, he said, a bad example to follow, and May seriously mistaken, because they denied the effectiveness of the assault with the bayonet by formed, and compact, bodies of men.⁵⁸

⁵⁷ Arnold, 62-4.

⁵⁸ Henderson, GFR, 'Military criticism and modern tactics', ch. 6 in *The Science of War: A Collection of Essays and Lectures 1891-1903* (London, Longmans, 1906). Sir Michael Howard's chapter in Paret, *Makers of Modern Strategy*, 'Men against fire: The doctrine of the offensive in 1914', gives a good account of this doctrine. He rates du Picq's contribution particularly highly. There is some evidence that French

Meanwhile, the Germans were, as ever, examining their own performance in critical detail. The published works which were so quickly translated into English, including the official Histories of the campaigns, give what is on the whole a picture of a coherent body of doctrine — despite occasional differences on points of detail, such as the disagreements between May and Boguslawski on the one hand and Bronsart on the other — but beneath this apparently consistent surface there was in fact a growing volume of fundamental disagreement in German military thinking. Professor Eric Dorn Brose has recently carried out detailed research into what the German military periodicals of the period reveal about debates on doctrine during the 1870s, and his conclusion is that those who ‘ emphasised the superiority of man and morale over machine and firepower prevailed by the late 1870s — to the army’s detriment’.⁵⁹ He gives examples of what this meant. As early as March 1873, he points out, a decree dropped the concept of the reinforcement of the fighting line in favour of retaining formed bodies of infantry for the assault. When, in 1879, General Sigismund von Schlichting, Chief of Staff of the Prussian Guard Corps, told the prestigious Military Society of Berlin that modern weapons made close-order attacks suicidal, he was immediately and fiercely contradicted; by 1881 the vastly experienced Prince Friedrich Carl was once again practising large-scale massed cavalry charges on manoeuvres.⁶⁰ In particular, Brose highlights how the unavoidable lack of realism under these conditions induced the German artillery to forget what they had learnt in the wars. ‘Shooting the cannons accurately from a reasonable distance played no role when blanks were fired, for this “bang, you’re dead” logic was lost on umpires who were more impressed by bold action and movement’.⁶¹

Brose’s case is that, in the German army as in the French, an aristocratic attitude of mind was encouraged, by what could conveniently be practised on the manoeuvre

soldiers were aware of du Picq’s views by 1880 (see Arnold, 62), but none that British soldiers had come across them.

⁵⁹ Brose, Eric Dorn, *The Kaiser’s Army: The Politics of Military Technology in Germany during the Machine Age* (New York, OUP, 2001), 4.

⁶⁰ Ibid, ch.1.

⁶¹ Ibid, 32.

grounds, to revert to an older and more formalised method of waging war, and to lose that understanding of the realities imposed by technological progress which they had developed during the 1860s. Indeed, he goes a little further. ‘As we shall see, it was the French and (to a lesser extent) the Russians, not the Germans, who blazed the trail of modern military technology in the 1880s and 1890s.’⁶²

The impact of these continental trends on British military thinking seems to have been insidious rather than overt. The German theorists whom they respected had written from their direct and recent experience of the fighting. The teachers within the British ranks, such as Clery, Chesney, Charles Brackenbury and Hale, continued to draw their examples from the same campaigns, and to emphasise the influence of defensive firepower. The attackers had won in the end, and decisively at that, but only because they had mastered the techniques for getting superior numbers and firepower to bear at decisive points, through more skilful organisation, planning and leadership. Moltke had always favoured the policy of the offensive-defensive, of putting his forces in such an advantageous position that the enemy would have no option but to waste his strength in trying to dislodge them. The advantage of this strategy, which Moltke’s successors would repeat in later wars, with notable initial success (if ultimate failure), was clear enough, and the young Frederick Maurice of 1872 dwelt on the importance of this at some length.⁶³

Gradually, however, as observers at the continental manoeuvres witnessed a reversion to more direct and compact methods of assault, the significance of the lesson began to be eroded. Arthur Griffiths recorded in 1878 that the superiority of the offensive was now firmly rooted in the German army, but that opinion in Britain remained

⁶² Ibid, 42. A letter from Hauptmann Groh of the German *Militär-geschichtliches Forschungsamt*, suggests that Brose may have exaggerated the effect of this reactionary trend, but it did exist; and Brose has certainly studied the debates of the period in detail. This letter and the enquiry to which it was the reply are reproduced in appendix A2.

⁶³ Maurice, ‘The system’, 74-83. As so often when a British commentator was extracting valuable theory from a foreign source, he found evidence that the British army had always done it anyway; ‘.... the advantages of the time-honoured habit of the English army, that of awaiting attack in order to return it.’ Ibid, 95.

divided.⁶⁴ A demonstration of this can be found in an article written by Colonel Sir Lumley Graham for RUSI two years later. His declared intention was to give an account of the current views of continental tacticians, and he was confident that ‘(t)he somewhat extreme views expressed by some well-known writers have toned down, conflicting opinions have been reconciled, and a period of doubt, uncertainty, and discord has been succeeded by one of comparative agreement’.⁶⁵ His article quoted extensively from the Instructions and drill books of the European armies to show a general acceptance of the lessons of the late wars, particularly those relating to the defensive power of modern weapons. On the other hand, near the end he gave a long extract from the observations of a French officer of the manoeuvres of the German XV corps in 1879, in the *Revue Militaire d’Etranger*, to the effect that the Germans were now more firmly wedded to dense assaults on the battlefield than the French.

There we observe a boldness and straightforwardness of action verging on foolhardiness; here discretion and prudence resembling timidity. Prussian attacks are made perhaps too brusquely, and as there are no bullets in the rifles, this show of cheap heroism is apt to produce a smile; but, on the other hand, French attacks are too mild, too creepy-crawly, too scientific; in a word, they do not appeal enough to the imagination and to the heart of the soldier, and the humdrum manner in which our infantry worms its way along is certainly further from the truth than the theatrical display of our neighbours.⁶⁶

Here Graham was recording, in addition to the alteration in the German doctrine, the language used by the new wave of French thinkers to create the fundamental change in outlook which would dominate their doctrine in the years leading up to 1914. This ‘offensive element’ clearly appealed to Graham, since it was coupled with a reduction in the emphasis on individual initiative which, he said, could turn battle into ‘ disorderly scuffles between armed mobs. But there is now a return to a sounder system’, involving collective rather than individual action, and even a revival of volley firing.⁶⁷

⁶⁴ Griffiths, *The English Army*, 221.

⁶⁵ Graham, Colonel Sir Lumley, ‘The tactics of infantry in battle’, *JRUSI*, vol.24, 1880, 870.

⁶⁶ *Ibid*, 895.

⁶⁷ *Ibid*, 896.

To many British officers, their thinking coloured by the experience of leading long-serving professional soldiers in colonial wars, this was an attractive message; and, as the century neared its end, such respected soldiers as Evelyn Wood and Maude were once again beginning to emphasise the moral impact of the headlong assault, by infantry with the bayonet and cavalry with the sabre.⁶⁸ The appeal of such thinking was certainly not lessened by the fact that Aldershot and even Salisbury Plain were better suited to such evolutions.

At all events, the value of resuming large-scale manoeuvres continued to be urged on the British establishment. The broadside on army reform which John Holms, MP, launched in 1875 was intended to illustrate the seven conditions for the army which, he felt, every European nation with any regard for efficiency and economy must adopt; and this was the seventh.

— That as a General cannot be made without drill any more than soldiers can be made without training, it is necessary, by means of autumn manoeuvres between distinct army corps, that commanding officers should have an opportunity of testing their own skill, so that the authorities and the nation may know upon whom, in case of war, they can best rely.⁶⁹

This recapitulates clearly enough the practical advantages which could be expected from a pattern of peacetime training culminating in manoeuvres on such a scale. It is also a reminder that these benefits would only be obtained if the structure of the army could be sufficiently changed, along the lines which reformers (and the Commander-in Chief cannot be excluded from the list, in this respect at least) had been advocating for years.

It is now time to look at the second theme of this chapter, the changes in the way that the army should actually fight.

⁶⁸ The end of the section of this study dealing with field fortifications, on page 86, including note 57, gives further references to the growth of this doctrine. See also Bailes, 'Patterns of thought', 32.

⁶⁹ Holms, *The British Army in 1875*, 12.

Tactics

On the continent this was a period of continuous and rapid reassessment of battlefield tactics. Each campaign produced new lessons about what was practical, and what was becoming suicidal, as the killing power of weapons increased. The British military establishment, onlookers so far as the wars in Europe and the USA were concerned, learnt many hard practical lessons about the reality of warfare in the larger world — in China, India, Burma and Afghanistan, West and Southern Africa, New Zealand and Canada — but the relevance of this experience, when it came to evaluating what should be learnt from the European wars, only gradually became an issue for debate, at least among the military establishment at home. This accounts for the fact that the present study, concerned as it is with the impact of the continental wars during the 1860s and '70s, will make few references to colonial, and not many to American, experience when looking at tactical issues;⁷⁰ but, before getting down to the detailed consideration of the impact of the European wars, at least a brief reference needs to be made to the emergence (or re-emergence) of colonial and American influences towards the end of the century.

During the two decades covered by this study there was no doubt that colonial pressures affected decisions at the practical level. The debate about army organisation was strongly influenced by the peculiar problems arising from the need to maintain permanent garrisons at many thousands of miles distance, and (as was seen in chapter three) progress in modernising artillery was directly affected by colonial requirements. Where the development of a doctrine for battlefield tactics was involved, similarly, there were underlying issues, and these gained in importance during the 1870s — as soldiers like Wolseley, with recent experience of colonial fighting, began to reach positions of influence — but the refinement of such thoughts into some kind of alternative doctrinal philosophy only came to the fore later in the century. During the 1860s and '70s, although (as will be seen) there were occasional references to lessons arising from

⁷⁰ The case for mounted infantry is one notable exception. Their value was being argued by soldiers with colonial experience, in the teeth of resistance from the home establishment, from the very beginning of the period of this study. See page 200.

experience in the colonies, focus on the results of the European wars was so intense that there was little attention to spare for anything farther from home.

In this context the American experience was something of a special case. Reference has already been made to a continuing interest in America where matters of organisation and technology were involved. Up till 1866 there was also considerable interest in the tactical lessons of the Civil War, but this evaporated as soon as the startling events of the Austro-Prussian War seized the attention of military thinkers everywhere.⁷¹

Later, as the influence of soldiers with colonial experience grew, and the impact of the continental wars of the 1860s and '70s began to fade, the climate of debate changed. The tactical reassessments which began to develop on the continent towards the end of the 1870s were noted and to some extent absorbed in Britain, as will be shown later in this chapter, and these two influences — the continental and the colonial — contributed to a renewed interest in the possibility that there might be a specifically 'British way of warfare' which was not necessarily doctrinally dependent on any continental model.

The development of this debate has been spelt out with admirable clarity by Howard Bailes and Edward Spiers.⁷² In 1888 Colonel Lonsdale Hale encapsulated the 'continental' view, that experience of colonial war was of no value at all. 'An officer who has seen service must sweep from his mind all recollections of that service, for between Afghan, Egyptian, and Zulu warfare and that of Europe, there is no similarity whatever. To the latter the former is merely the play of children.'⁷³ By this time, however, thoughtful soldiers, even those who shared Hale's deep admiration for German methods,

⁷¹ Luvaas explores the subsequent neglect of the American experience in interesting detail in ch.5 of *The Military Legacy*, particularly pages 115-8. There were exceptions; Charles Chesney occasionally returned to the American war, particularly when the publication of reminiscences of the campaigns offered the opportunity for an article based on a book review. See, for example, his 'Sherman and Johnston, and the Atlanta campaign', *Fortnightly Review*, vol.18 ns, (1875), 611-24. Professor RA Preston, 'Military lessons of the American Civil War', *The Army Quarterly*, vol.65, Jan. 1953, 229-37, points out that many of the observers, such as Wolseley and Denison, showed years later that they had absorbed more from their experiences than they recorded at the time.

⁷² Bailes, *Thesis*, ch.1, 25 et seq. and in his article 'Patterns of thought in the late Victorian army', *The Journal of Strategic Studies*, vol.4, no.1, (March 1981), 39-40. Ch.9 of Spiers's *Late Victorian Army* gives a particularly clear summary of how British thinking evolved during the last twenty years of the century.

⁷³ Hale, Lonsdale, 'The spirit of tactical operations to-day', *Proc RAI*, vol.16, 450.

were beginning to challenge so narrow a focus. Colonel JF Maurice's book *War*, published in 1891, while lavish in its praise of German realism, professional skill and willingness to learn, significantly expressed his condemnation of those soldiers who thought that 'small wars' were a bad preparation for 'war on a large scale'.⁷⁴ During the same period a series of articles by Charles Callwell, culminating in his book *Small Wars: Their Principles and Practice*, served as reminders that there were indeed principles directly relating to the sort of fighting with which British soldiers were actually familiar.⁷⁵ At the same time, another rising young soldier, GFR Henderson, was beginning to point out that it had been wrong to forget the lessons of the American war.⁷⁶

In 1859 all this was very much in the future. At home, the concern was, first, with the immediate prospect of having to fight off an invading continental army and, later, with a possible requirement to intervene on the continental mainland. The tactical issues which arose from the study of such challenges must now be examined.

As the analysis progresses through the years under examination it will not be surprising to find that the main influences were largely governed by the perception at the time of which country represented the leading military power — France in the early 1860s, combined with a fascinated, if rather patronising, interest in the American war; after 1866 a rising concentration on the emerging Prussian/German military machine, which would dominate analysis throughout the 1870s; concluding with a brief, but intense, interest in the Russian experience in 1878. However, two points must be made at once. Concern about what was happening in other continental armies than these was never entirely lost, whichever seemed to be the dominant force at the time (which reflects well on the professional sophistication of the British establishment); and the doctrines of

⁷⁴ Maurice, JF, *War*, (London, Macmillan, 1891), 94.

⁷⁵ 'To a soldiery accustomed only to drill-book manoeuvres practised on gentle undulations, a few of the simple maxims known to every Gurkha havildar are, when retiring down a mountain side in the gloaming dogged by ferocious clansmen, worth a whole folio of Prince Kraft', is typical of his approach. Callwell, Charles, *Small Wars: Their Principles and Practice*, originally published in 1896, 3rd ed. (London, HMSO, 1906), 347.

⁷⁶ Henderson, GFR, *The Campaign of Fredericksburg*, (London, Gale and Polden, 1883) and his *magnum opus*, *Stonewall Jackson and the American Civil War*, (London, Longmans, Green, 1898).

the leading armies were by no means as settled as some of the most eloquent literature of the time would make out.

In 1859 the British army at home was beginning to realise that technical improvements in weaponry, particularly the introduction of rifling for small arms and artillery, might force a reappraisal of battlefield tactics. Lecturing at RUSI in June 1857, Lieutenant-Colonel Dixon, RA, had endeavoured to set the scene. Artillery, he said, would enjoy ‘ a great preponderance in determining future battles. We shall not see again cavalry thrown away at an early period of action, while infantry are still intact’.⁷⁷ These shrewd predictions were, surprisingly, accompanied by the judgment that the introduction of improved rifles would not lead to major changes in infantry tactics.

I do not think that under any circumstances battles could be fought or gained by skirmishers or infantry acting in extended order. An army would cease to act as a whole, and operations would be restricted to a multiplicity of small and insignificant attacks at isolated points.⁷⁸

Shortly before the outbreak of war in Italy two years later James Fergusson wrote about artillery and cavalry in similar vein, but his opinions about the future of infantry tactics were already radically different. Although he disapproved of giving every infantryman a breech-loader because this would lead to a waste of ammunition, he spoke admiringly of the French for training theirs to work in looser formations. ‘In whatever manner battles will in future be fought it seems tolerably evident that close formations and heavy infantry drills are out of date’⁷⁹

Charles Chesney’s article of January 1866 in the *Edinburgh Review* on ‘Recent changes in the art of war’ has already been referred to in the chapter on changing technologies. In it he expressed his satisfaction that the country had at last moved out of a period of military stagnation, in which ‘..... the officer regarded the few among his fellows who gave their spare hours to the study of their profession as mere eccentrics, led

⁷⁷ Dixon, Lieut.-Colonel, RA, ‘The rifle — its probable influence on modern warfare’, *JRUSI*, vol.1, 1857, 113-14.

⁷⁸ *Ibid*, 111. This reluctance of regimental officers to concede that control *must* be lost will be a recurring theme.

⁷⁹ Fergusson, J, ‘Rifled guns’, 517,537.

by some strange aberration of intellect into a pursuit tedious in itself and tending to no practical result'.⁸⁰ The art of war was now being closely studied, and due note taken of the need for changes in tactics. Much was being learnt from the successes of the Federal American forces, '(a)nd more striking still as an example, the brief campaign of 1859 showed the astonished world the practical results of the diligent improvement by France of her Algerian and Crimean experience'.⁸¹ Chesney referred particularly to the need for infantry to skirmish in open order, for all to note that the increased range of rifled artillery permitted it to be more concentrated, and concluded that in future there would be few opportunities for cavalry to intervene decisively on the battlefield. In addition to these lessons from 1859, he noted one innovation from the American war, the introduction of mounted infantry — but was not prepared to deliver a verdict on its merits in a European context. Taken overall, his lessons about tactics do not amount to anything very fundamental; and in this they reflect the general judgment of his peers.

Some, indeed, drew comforting lessons that not much needed changing, anyway. A series of articles in the *USM* between 1861 and 1863 considered what needed to be learnt from the campaign of 1859. Two of these concerned 'The future of cavalry'. The anonymous author agreed that Britain should learn from continental experience, particularly French, and concluded that improvements in firearms simply meant that there should be more light cavalry; the lance was still the queen of weapons, and mounted infantry a flawed compromise. If cavalry had not shown to advantage in 1859, this was because the ground in Italy was not favourable. 'Cavalry in future will appear on the battle field to give decisive blows — to annihilate the foe.'⁸² A further two articles, on 'The British cavalry and its organization', rejoiced in the fact that they were '.... the finest body of men that the earth could produce. Not only that, but they were, and still are, far better mounted than any other cavalry'. Their future was bright, and '.... cavalry will probably be brought into action at an earlier period in a battle than has been customary in former wars'.⁸³ Another series of articles in the same journal aimed to

⁸⁰ Chesney, C, *Edinburgh Review*, vol. 73, 95.

⁸¹ *Ibid*, 97.

⁸² Anon, 'The future of cavalry', *USM*, 1861, part 1, 569-75 and part 2, 47-53. 571.

⁸³ Anon, 'The British cavalry, and its organization', *USM*, 1862, part 1, 177-89 and 337-51. 178.

cover a wider selection of tactical topics, but its author, who identified himself as a cavalry officer of nearly thirty years standing, added his voice to those asserting that the day of the massed charge was not over.⁸⁴

Where infantry tactics were concerned, he was struck by the continuing success of the *furia francesca* in 1859; their direct and simple methods should be the model. German formalism, on the other hand, should be avoided.⁸⁵ He was similarly impressed by the fact that the French kept the control of the different arms separate until the highest level of command.⁸⁶

America erupted into civil war just as these rather comfortable opinions, implying no great awareness of a need for radical changes in British tactics, were being formulated. As was seen in the chapter on technologies, American developments in fortification, particularly in the field, communications and weaponry had led to much interested speculation from the outset; but the significance, for the future of tactical development, of what was happening on the field of battle, was not initially taken seriously in Europe in general. 'They make war after a fashion of their own, these Americans; let them kill each other off as they please: there is nothing for us to learn by studying their campaigns.' With this quotation from a 'distinguished French officer', Charles Chesney set out in January 1865 to show that so disdainful an attitude was misguided, and possibly dangerous.⁸⁷

However, his first concern was with strategy. At the tactical level, while there was much to be learnt about the constructive use of field fortifications and the difficulty of keeping control of the fight in close country, the example of the French in Italy in 1859 was still the more valuable model.⁸⁸ In particular, he supported the view that the improvements in artillery were having no decisive impact on the tactical management of

⁸⁴ Anon, 'Military studies', *USM*, 1863, part 1, 504-19 and part 2, 51-71, 408-24 and part 3, 11-31.

⁸⁵ *Ibid*, part 1, 513.

⁸⁶ *Ibid*, part 2, 476.

⁸⁷ Chesney, Charles, 'The last campaign in America', *Edinburgh Review*, vol.121, January 1865, 252-88, 252.

⁸⁸ Chesney, Charles, 'Recent changes', 97,125.

battle; charging home with the bayonet was still the way to achieve a decisive victory.⁸⁹ Where cavalry were concerned, the experience of both the Italian and the American campaigns showed that their traditional role on the battlefield must diminish. On the other hand,

(w)e are brought here naturally to consider the use of one great addition to modern tactics, springing from the American war — the only special creation, as it seems, which American generals have added or rather restored to our stock, viz. bodies of mounted infantry.⁹⁰

He saw how valuable a resource such troops had been in the American war, and speculated, rather equivocally, about their usefulness in the European context.⁹¹ This was to be a cause much taken up by British (and Canadian) soldiers with experience of colonial wars, and it provoked some of the most heated debate for the next fifty years. Luvaas has shown how much interest British observers of the Civil War had taken in the development of the use of mounted infantry (or cavalry equipped with good carbines and trained to fight on foot when necessary).⁹² He identified Wolseley, the Canadian George Denison, George Chesney, and particularly Henry Havelock (later Sir Henry Havelock-Allan) as having been strongly impressed by the potential of this kind of highly mobile force.

He was clearly right to do so, and the value of such troops was to be forcibly brought home to the British army in the Second Boer War,⁹³ but it needs to be reiterated that both the principle and the detailed organisation and tactical doctrine of mounted infantry were being actively promoted by a handful of enthusiasts before the American war began. In 1859 Major C Raleigh Chichester wrote ‘.... to suggest an improvement I have long thought necessary, and which in India circumstances have compelled us, after a fashion, to adopt’.⁹⁴ Noting with approval that the French had their *Chasseurs d’Afrique*

⁸⁹ Ibid, 120-2.

⁹⁰ Ibid, 124.

⁹¹ By April 1871 any reservations had been swept away. See page 205.

⁹² Luvaas, *The Legacy*, 108-15.

⁹³ Denison made this point in the 2nd edition of his *History of Cavalry* (London, Macmillan, 1913), xi-xiv and 433.

⁹⁴ Chichester, Major C Raleigh, ‘Proposed force for outpost and advanced infantry duties generally’, *USM*, 1859, part 1, 1-7, 1.

and the Russians their Cossacks, he proposed the establishment of twenty-two squadrons, eleven at home and eleven in the colonies, of

.... a corps of men, light armed, light horsed, light of body and foot, who can skirmish in the front and rear of armies, keeping at a distance the watchful enemy, pouncing on his convoys, harassing his outposts, and bringing early intelligence of inimical movements, pregnant often with the fate of thousands, ready to act where cavalry would be useless, or at a distance, when the presence of ordinary infantry, in time to do the work, could not be looked for.⁹⁵

Henry Havelock was an obsessive advocate in the same cause. As Luvaas has said, American experience did much to reinforce Havelock's support for the concept of mounted infantry, which he promoted with passion in his later writings,⁹⁶ but he had been pressing his detailed proposals for such a force on the Secretary for War, based on his own experience in India, before the Americans had been at war long enough to provide evidence of its practical utility in a major campaign. A sixteen-page memorandum to Sir George Lewis dated 17 December 1861 set out his 'Suggestions for at once supplying the Force in Canada with a complement of efficient Cavalry, (embodying a principle, never yet fairly tried on a large Scale, but undoubtedly destined to play a most important part in future tactics); that of Mounted Riflemen'.⁹⁷ Claiming the authority of

.... having had myself I believe greater opportunities during the Indian Campaigns of 1857-59, of acquiring practical knowledge of the organisation and working of Cavalry, together with insight into its present practical defects, and its capabilities under a better system; than perhaps any other officer

he declared that '.... our costly and magnificent Cavalry, as at present trained are almost useless.'⁹⁸ He had, he said, been making proposals for soldiers who would combine the mobility of cavalry with the ground-holding power of infantry since 1858, and was proud that the Emperor of the French, learning from the experience of his campaign in Italy in 1859, was converting most of his own cavalry on this system. If the British cavalry would only adopt the details of training and equipment which he proposed they would once again command '.... the proud pre-eminence of the first in Europe'.⁹⁹

⁹⁵ Ibid, 2.

⁹⁶ Particularly *The Three Main Military Questions of the Day* (London, privately, 1867).

⁹⁷ Harpton Court Papers, no. 2986, 1.

⁹⁸ Ibid, 5, 6.

⁹⁹ Ibid, 16.

This last was of course the crucial question. A cavalry establishment which spent much less of its time in the colonies than the infantry and the gunners, and which was deeply conscious of how long it took to train cavalymen to learn the traditional evolutions of the parade ground, found it hard to come to terms with something so fundamental in the way of a doctrinal change. In any case, it was not easy to find the space, in the privately owned and rigidly demarcated British farmlands, to practise the wide-ranging manoeuvres involved in learning how to add the provision of intelligence and protection for an army on the move to their traditional battlefield role.¹⁰⁰

Commanders in the colonies had not suffered the same constraints, and operational necessity had forced them to work out such tactics for themselves; not only in India, the inspiration for Havelock and Chichester's recommendations, but also in South Africa, where, in addition to the locally raised Cape Mounted Rifles, there was a small mounted infantry troop of the Regular 75th Regiment; and there were similar locally-raised units in Australia and New Zealand.¹⁰¹

Throughout this period debate continued to rage about whether such colonial experience had any relevance to Europe. Continental engagements and evolving doctrines were eagerly seized upon by the supporters of all sides whenever they seemed to provide ammunition for the cause. The progress of this debate will now be briefly examined, and then the other tactical issues will be considered in the same way.

Cavalry and mounted infantry

The issues in question were not easy to unbundle during argument. There was the question of the rôle of cavalry in battle. Was it still feasible to charge home with the sword, using the weight of heavy horses and big men to smash the enemy? Deny this, and there was no longer a need for heavy cavalry at all, yet in every European army the social

¹⁰⁰ Colonel C Cameron Shute expressed the problem particularly succinctly in a lecture at RUSI on 18 March 1870. 'Military maxims suggested, or exemplified, by the last autumn manoeuvres of continental armies', *JRUSI*, vol.14, 1871, 207-8.

prestige and connections of these regiments were closely associated with those of the traditional ruling classes. Should light cavalry be equipped with sabres or lances, so that they could perform the same function when needed? Or should their main armament be a firearm, so that they could fight on foot when necessary, and better perform their wider-ranging duties? If the latter, there was the psychological, or at least social, problem of the direction from which this rôle should be approached; should light cavalrymen be taught and equipped to fight on foot, or should selected infantrymen be taught to ride? The entrenched traditions — their opponents would say prejudices — of the cavalry establishment continued to make it extremely difficult to examine these questions rationally and without emotion, but practical demonstrations of the need to do so arose from every major war.

It is to the credit of the Commander-in-Chief that he recognised this at an early date, even if an innate unwillingness to enforce rapid change, especially when there might be powerful opposition, caused him to express his views cautiously. Whatever other opinions there were about the Duke of Cambridge, it was generally acknowledged that he was an authority on the subject of cavalry.¹⁰² His comments on the future of that arm during the important RUSI debate in April 1865 have been much quoted, and it is odd that he has not subsequently been given more credit for his observations on that occasion.

There should be masses of light cavalry. Probably the day of heavy cavalry has somewhat passed by. I do not pretend to say that they ought to be given up, because to that extent I do not go. I believe that heavy cavalry at a critical moment may be very useful and necessary. But, as to light cavalry, there can be no question that the impolicy of not having much, must be apparent to anyone who permits himself to consider the subject.¹⁰³ In the light of the performance of the cavalry of all sides in the campaigns of 1866 and 1870 these were prescient comments, and more balanced than some of the arguments which emerged from subsequent debate.

¹⁰¹ Haythornthwaite, PJ, *The Colonial Wars Source Book*, (London, Arms and Armour Press, 1995), 180, 282, 293.

¹⁰² He had been appointed Inspecting General of Cavalry in 1852. Verner, vol.1, ch. 3.

¹⁰³ Cambridge, speaking in Chesney, 'The last campaign', 220.

One British soldier, who had observed the autumn manoeuvres of the major European powers during the 1860s, and whose admiration for all things Prussian as a result of what he had learnt from theirs was transparent, had much advice to offer on their use of cavalry in a lecture at RUSI shortly before the Franco-German War, in March 1870.¹⁰⁴ Shute's observations had convinced him that cavalry could still participate decisively with the sabre on the battlefield, but equally that their role was to act as the eyes of the army commander and an 'impenetrable' screen. In both roles the 'Prussian cavalry had proved of inestimable value in 1866'.¹⁰⁵ This unusual assessment was clearly influenced by what he had seen of their manoeuvres since that war. The more common evaluation within British military circles, based on the recent appearance of the English translation of Hauptmann May's *Tactical Retrospect*, was that the Prussian cavalry had been badly handled in 1866.

Two articles which appeared shortly after Shute's lecture, but also after the campaign of 1870-71, illustrate this. Both referred extensively to May, noting the validity of his criticisms, but emphasised how quick the Prussians had been to learn from their own experience, even if they had not been willing to learn from the Americans. An article on 'Our cavalry system' in the *USM* in 1871 cited May in making both these points strongly. The anonymous author did add the caveat that

there is now a Prussian mania far stronger than the French mania ever was. It seems now to be tacitly but generally understood, that no arguments are now required to justify a change, however great or radical, except the simple statement that 'they do this in the Prussian army'.¹⁰⁶

Even so, the British army should learn the lesson, and adopt both the training and tactical patterns of the Prussian cavalry.

Charles Chesney made exactly the same points in his 'Studies of the recent war'. As a result of their experience in 1866 the Prussians had triumphantly learnt that the true rôle of cavalry was to screen the army, while obtaining intelligence and harassing the enemy;

¹⁰⁴ Shute, 'Some maxims', 218-22.

¹⁰⁵ Ibid, 219.

¹⁰⁶ Anon, 'Our cavalry system', *USM*, 1871, part 3, 568-80, 573.

by contrast, charging home on the field of battle was simply a suicidal waste of men.¹⁰⁷ By now (April 1871) Chesney had fully come round to the view that mounted infantry were a crucially important resource, and he castigated the Prussians for having failed to appreciate this.

It is well known that Count von Moltke has openly rejected the notion that European armies can profit by studying the lessons of the American Civil War, among which the foremost is that action of large bodies of mounted riflemen, which, under Kilpatrick, Sheridan and Wilson, helped to decide the contest between North and South.

As a result, they had had to resort to such expedients as reinforcing the cavalry brigades with riflemen carried in carts.¹⁰⁸

In the aftermath of the Franco-German War, this issue of the value of mounted rifles continued to attract the attention of alert minds. Maurice, in his 1872 Prize essay, could see many uses for such men, on the march as well as for escorting the guns on the battlefield. There would no longer be many opportunities for cavalry charges, but he still spoke of mounted riflemen *accompanying* the swarms of light cavalry in the open rather than seeing cavalry become mounted rifles themselves.¹⁰⁹ Colonel Valentine Baker, in a lecture at RUSI the following year, similarly emphasised the need to train, and practise, the reconnaissance rôle, and acknowledged the value of having some mounted infantry to support the cavalry; but he rejected any idea of training the cavalry themselves to work in the way that the Americans had developed. He was particularly opposed to arming them with pistols, ‘ a demoralizing and dangerous weapon for a cavalry soldier’.¹¹⁰ Colonel Evelyn Wood expressed similar sentiments in a lecture to Volunteer officers, chaired by that vigorous Volunteer Lord Elcho. ‘The experience gained during the war of 1870-71, has confirmed the opinion long held by many soldiers that “mounted riflemen are now

¹⁰⁷ Chesney, C, ‘Studies of the recent war’, 569.

¹⁰⁸ Ibid, 570. Colonel HA Smythe, RA, who had been with the Prussian 7th. Corps during the autumn fighting in 1870, said that the Germans were not attracted by the idea of mounted rifles because their three-year period of service was not long enough to allow for adequate training of all the skills required. ‘Some observations among German armies during 1870’, *Proc RAI*, vol.7, 1871, 200.

¹⁰⁹ Maurice, ‘The System’, 104, 142.

¹¹⁰ Baker, Valentine, ‘Organization and employment of cavalry’, 14 March 1873, *JRUSI*, vol.17, 1874, 384.

essential to every enterprising army”.¹¹¹ However, cavalry trained to depend on firearms would never charge. Accordingly, mounted rifles ‘ should never be allowed to grow into indifferent horse. Such a corps should consist of trained marksmen on horses and vehicles, and should invariably dismount to fight’.¹¹²

By this time German reflections on the lessons of the 1870-71 campaign were proliferating.¹¹³ Colonel Ouvry, who was instrumental in bringing some of the most significant of these writings to the attention of British soldiers, summarised one of these pieces for *JRUSI* in 1875.¹¹⁴ In this he recorded German satisfaction with the improved performance of their cavalry since the Austro-Prussian War, quoted from their regulations of 1873 to show their recognition that battlefield charges would be rare events, and (in what appear to be sentences directly translated from the original) set out a German acknowledgment that cavalry should themselves be equipped and trained to fight on foot.

The cavalry reforms have been equally important. The view that the sabre is the arm which forms the essential characteristic of the cavalryman must, since the experience of 1870-71, fall to the ground. The most complete independent action for cavalry must be the watchword in the future, and to aid this *a good fire-arm must be supplied*.¹¹⁵

1875 also saw the publication of Clery’s *Minor Tactics*.¹¹⁶ This is an important book for several reasons, and it does support the argument that British officers were soundly exposed to what was happening on the continent. The advertisements inside the front cover list an imposing number of foreign (mainly, of course, German) military works in translation.¹¹⁷ Captain Clery was at the time Professor of Tactics at Sandhurst,

¹¹¹ Wood, Colonel Evelyn, ‘Mounted Riflemen’, *IHR Military Pamphlets*, vol. 16, 13. The format of this paper suggests that it was originally delivered at RUSI. The year is not given, but 1874 would fit the context.

¹¹² *Ibid.*, 28. It is to be noted that Wood was a rifleman, not a cavalryman.

¹¹³ ‘After 1871 the German military journals were awash in debates over strategy and tactics.’ Foley, Robert T., ‘Attrition: Its theory and application in German strategy, 1880-1916’, unpublished PhD thesis, 1999, 12. He cites Samuel Huntington to the effect that, by 1859, the Germans were producing 50% of all the military literature of Europe.

¹¹⁴ Ouvry, Colonel, ‘A review of the improvements in military tactics and formations in Germany during the last year (1873). (Précis of an Article from the “*Militair Wochenblatt*”)’, *JRUSI*, vol.18, 441-9.

¹¹⁵ *Ibid.*, 446.

¹¹⁶ Clery, C, *Minor Tactics*, (London, Henry S King, 1875).

¹¹⁷ See illustration 7.

and the book consists of lectures which he had delivered to sub-lieutenants studying there. These lectures rely heavily on the events of 1870-71 for examples of good practice, but it is comforting to see occasional bursts of British pragmatism warning against too ready an acceptance of every tactical theory. His comment on the use of large advance guards is an example.

Successful practice must always override antagonistic theory. The use of large advanced guards by the Germans in the two last wars, whatever objections they may seemingly be open to, cannot be condemned by contrast with any other more successful organisation. Hence the adoption of the principle has become very general in other European armies. But it may be well at the same time to point out some of the attendant disadvantages.¹¹⁸

Despite this proviso, Clery talks at length about the successes of the German cavalry in the reconnaissance role in 1870, and draws the conclusion that such cavalry must be equipped and trained to fight on foot when necessary.¹¹⁹

When it comes to cavalry on the battlefield, however, he struggles to find a consistent approach. On the one hand ‘(m)odern warfare has reduced the role of cavalry on a battle field to very insignificant proportions’, but he cannot quite bring himself to dismiss ‘.... the effect, moral as well as physical, produced on the enemy by the shock of collision’, and he finds many examples from the recent continental wars where battlefield charges either succeeded, or should have done so if properly executed.¹²⁰

Towards the end of the decade, and as memories of the carnage resulting from the bloody repulse of most actual charges in 1870 faded, the confidence of the traditionalists in the cavalry began to reassert itself. In April 1878 Major Boulderson, 17th Lancers, led a debate at RUSI on ‘The armament and organization of cavalry etc.’ which amounted to a standard presentation of the case for the charge home with the *arme blanche*.¹²¹ This was a well-attended affair, chaired by the Officer Commanding Aldershot, and included such luminaries as the Commander-in-chief from the Crimea (General Sir William

¹¹⁸ Ibid, 74-5.

¹¹⁹ Ibid, 124.

¹²⁰ Ibid, 145, 111, 112-6.

¹²¹ Boulderson, Major S, ‘The armament and organization of cavalry etc.’, *JRUSI*, vol.22, 378-96.

Codrington), Lord Elcho, MP, and the recently-returned military attaché at Berlin (Lieut.-General Beauchamp Walker). The debate which followed the lecture, as so often happened when the subject was one which attracted a large and distinguished audience, was of more significance than the paper itself.

Walker's contribution was particularly powerful. He described how fiercely he had previously opposed the idea of giving cavalry a firearm; but times had changed. His observations of the German army had taught him the necessity for cavalry to be able to range far and wide, and often to hold ground which they had seized. To do this they must be able to fight on foot, with a weapon of good range, which was why the German cavalry in the late war had taken every opportunity to equip themselves with captured *Chassepôts*. But they should be trained cavalrymen.

As to mounted infantry, of which we have heard, in my opinion they are neither one thing nor the other; they are not good cavalry, and are therefore unable to understand the independent duties as bodies of cavalry, and they certainly to a great extent would be spoiled as infantry.¹²²

Boulderson had advanced the theory that the ranks of the cavalry should be differentially armed, the front rank with lance, sword and pistol, and the rear rank with carbine and sword. Walker felt that the British army had too few cavalry to justify any large number being armed with the lance. The subsequent debate became progressively more detailed, on this issue as well as that of the advantages and disadvantages of the rifle over the carbine, but in the course of it Lord Elcho, gracefully acknowledging that, '.... not being a cavalry Officer, and only a civilian soldier, it is not for me to give an opinion', delivered himself of views which were both robust and well-informed on all the points at issue.¹²³ In winding up the debate, Boulderson grudgingly admitted that there might be a place for some mounted infantry.

¹²² Ibid, 389. Cavalry officers continued to maintain, not without justice, that British soldiers who were not fully trained cavalrymen would not look after their horses properly. See (the now General) Shute's comments at another RUSI debate in 1876, 'Cavalry', *JRUSI*, Vol. 20, 1877, 179-94.

¹²³ Ibid, 390-2. He mentioned that he '.... happened to succeed Lord Spencer on the Small Arms Committee' He was in fact deeply involved with matters relating to the auxiliary forces, and Colonel of the London Scottish Volunteers.

Not all cavalrymen were so hidebound. Captain Henry Hozier had been an interested observer of the war between Russia and Turkey in the Balkans in 1877, and his account of it included this comment. ‘The dragoons are in reality mounted rifles. Alone of all the powers in Europe the Russians have recognized the great utility of mounted infantry.’¹²⁴ However, it seems that thinking soldiers had given up any serious hope of seeing either the formation of specialised mounted infantry units in the regular army or an acceptance by the cavalry that they must be ready to fight on foot as a normal part of their duties. At all events, the big debate at RUSI in May 1880 led by Captain James, covering twenty-five pages of the *Journal*, contains less than one page of exposition on the realities of cavalry warfare on the continent (the general futility of charges and the necessity to be ready to fight on foot), and no mention of it at all in the debate itself.¹²⁵

Perhaps the last word on this subject should lie with Evelyn Wood. Twenty-five years later, and now a famous General, he looked back at these wars in order to find evidence for what the future might have in store for the cavalry.¹²⁶ His conclusion was one which would comfort his cavalry colleagues. His list of foreign authorities is impressive, and he quotes from Prince Kraft’s *Letters on Cavalry* to justify his view that there is a place for mounted infantry in support of the cavalry;¹²⁷ but his main point, based on examples carefully selected from the wars of 1866 and 1870, is that cavalry, properly directed, can still triumph in the charge. ‘Finally, we see how a startling success was obtained with trifling loss to the victors, by a skilful, resolute Leader, who knew how to utilize broken ground, and whose soldiers followed as bravely as he led.’¹²⁸

¹²⁴ Hozier, Henry, *The Russo-Turkish War*, (London, Wm. Mackenzie, 1877-8), 350.

¹²⁵ James, ‘Modern fire’, 388-9.

¹²⁶ Wood, General Sir Evelyn, *Achievements of Cavalry*, (London, Bell, 1897).

¹²⁷ *Ibid*, 249.

¹²⁸ *Ibid*, 190; This was the action at Tobitschau on 15 July 1866. Three squadrons of the 5th Prussian Cuirassiers charged an Austrian artillery position which had been observed to have no escort. They captured eighteen guns, two officers and 168 men for the loss of ten men; scarcely a major engagement, but

Infantry

During the earlier 1860s the French were still regarded as the model for infantry success in the field. While the general use, and demonstrable effect, of field fortifications in the American War had been duly noted,¹²⁹ there was no attempt to formulate any new tactical doctrine for British infantry, and, as late as January 1866, Charles Chesney remained confident that the traditional way was best. Charging home with the bayonet was still the best way to achieve decisive results. ‘(1) When made resolutely, and without slackening the gait, bayonet charges have succeeded in nine cases out of ten. (2) The bayonet is usually more effective than grape, canister or bullets.’¹³⁰

How different a story he had to tell by October of that same year. In the aftermath of the Königgrätz campaign he was now pointing out ‘.... the actual fact of the complete failure of Prince Frederic’s attack at Sadowa on the very poorly intrenched position of the Austrians.’ Given that they were armed with a breech-loader, the Prussian doctrine

....that in all contests of infantry they must keep three objects in view; (1) to receive or approach the adversary on as open ground as may be; (2) to endeavour to keep him as long as possible engaged in a musketry contest; and (3) *to handle their own troops in deep formation* was the recipe for success, and ‘.... the secret of those sudden flank attacks which surprised the Austrian officers, and caused them such severe losses in prisoners.’¹³¹

The dramatic success of this campaign left no doubt that a new era in infantry tactics had begun, and the events were carefully examined in order to identify the elements which now needed to be taken into account. In practice, this meant that, since the Prussians had been so successful, their actions, and their infantry doctrine (in so far as it had been laid down) must be dissected in detail. Three main issues dominated this analysis, and the debate about them can be traced through the remaining years of this study.

their ‘Leader’ was von Bredow, subsequently famous for the brave, but costly, charge at Mars la Tour on 16 August 1870. (Details from the official German *Campaign of 1866 in Germany*, 339.)

¹²⁹ See chapter 3, 83, particularly Cambridge’s comment about the importance of the spade, even in attack.

¹³⁰ Chesney, C, ‘Recent changes’, 106.

¹³¹ Chesney, C, ‘The military growth of Prussia’, 588-9.

The tactical unit – the company. The American Civil War and the 1866 campaign in Germany brought home to the whole world the extent to which the range and killing power of firearms had increased. The chapter on technologies was largely taken up by debate about the implications for the British army, particularly in terms of the need to improve its own weapons and recognise the need for field fortifications. Discussion continued to focus on these aspects, rather to the exclusion of other tactical considerations, until Hauptmann May's analysis of the performance of the Prussian army in 1866 was made available to a British audience by Colonel Henry Ouvry. These two short books, *The Tactical Retrospect* and *On the Prussian Infantry 1869*, appeared in his translation in 1870, and immediately soldiers found themselves confronted by the need to think fundamentally about how to manage infantry under the fire of modern weapons.

The first issue was the number of men that it was possible to manage, once battle was joined. For two hundred years the cavalry and infantry of all European armies had been organised in regiments, under the command, and in many respects run as if the private property, of their Colonels. In most continental armies the infantry regiments were made up of two or three battalions, each with a theoretical war establishment of approximately a thousand men and commanded by a Major or junior Colonel. In the British army at the beginning of this period, most infantry regiments consisted of only one battalion, commanded in practice by a Lieutenant-Colonel (and the post of regimental Colonel merely a well-rewarded sinecure for a respected General). On campaign these battalions normally fought as a unit under the direct orders of their battalion commander. In the conditions which had existed until 1866 such a tactical arrangement had proved to be generally practical, and Richard Holmes has recently given a most evocative account of how this actually worked in battle in the early years of the nineteenth century, in the first chapter of his book, *Redcoat*.¹³²

In 1866 the drill books and infantry regulations of all participants still embraced this

¹³² Holmes, Richard, *Redcoat, the British Soldier in the Age of Horse and Musket* (London, Harper Collins, 2001). The practicalities of colonial warfare were often, of course, very different, and this will have a bearing on some of the British reaction to this issue, in the pages which follow.

principle that the battalion commander directly controlled his thousand men on the battlefield. May, however, pointed out this was simply an impossibility under conditions which dictated that success depended upon looser formations and the use of ground in ways that could not possibly be controlled directly by one commander. The 1866 campaign had demonstrated time and time again that battalion columns were a disaster on the battlefield, and if troops had to fight in dispersed order they were inevitably beyond the reach of their battalion commander once a fire fight had begun.¹³³ In practice, and he wrote as a company officer, the company, of up to two hundred and fifty men, was the ideal tactical unit; and the company commander (or chief, or father) the vital tactical commander. Companies must work and train together to practise what they would have to do on the battlefield, and battalion commanders must learn to hold themselves aloof, instead of trying to retain a tactical control which they could not maintain under fire.¹³⁴

This raised several fundamental issues. The first was the size of the tactical unit. Prussian battalions were divided into four active companies (hence enjoying a war establishment of two hundred and fifty). British battalions were usually organised into eight active companies (not counting two dépôt companies), each with a theoretical strength of about one hundred and twenty.¹³⁵ Should the British army follow the Prussian example, as other European armies were quick to do? The issue was debated fiercely, if not always with a firm understanding.¹³⁶ Charles Chesney set out the case for the Prussian big company clearly, in an article in April 1871, relying heavily on May and stressing the shock to the Austrians when they encountered ‘...the outstanding elasticity and quickness which the development of the use of the company as a unit for manoeuvring has given the Prussian infantry’.¹³⁷

¹³³ *On the Prussian Infantry*, ch.2. Ch. 3 carries on the argument. Battalion commanders, reluctant to lose tactical control on the battlefield, tried half-battalion columns, but these also lost all cohesion and, crucially, suffered the disadvantages of not having a permanent command structure.

¹³⁴ *Ibid*, throughout the first ten chapters.

¹³⁵ Home, *A Précis*, 5. In practice such numbers were hardly ever achieved on active service; eighty to one hundred effectives per company would have been usual for a British battalion.

¹³⁶ For example, see Colonel Domville’s contribution to the debate following Charles Chesney’s paper on ‘The reform of Prussian tactics’, which confuses a Prussian battalion with a half battalion in making the case for the British battalion of (ten) small companies remaining the basic tactical unit. 248.

¹³⁷ Chesney C, ‘Studies’, 549.

British resistance to this innovation surfaced quickly. PL MacDougall, now a DQMG, took up the issue in a memorandum for the War Office a year later. ‘I may claim to be heard on this question, because I was the first writer, either in England or elsewhere, to advocate (in 1864) the necessity of adopting an open formation for an attacking line in the face of breech-loading fire.’ He set out succinctly all the arguments which those wishing to retain the British size of companies would continue to deploy. ‘It is by no means desirable to cut an English coat out of Prussian cloth Strong companies were at first adopted by the Prussians more for economical than for tactical reasons’ There was no case for the British army to follow suit.

1. The supposed change would radically alter our present battalion organization, which has been almost uniformly successful in battle, according to the experience of more than a century, against the best continental soldiers.
2. The change, if effected, would result in a dangerous diminution in the proportion of officers to rank and file.
3. There is no trustworthy evidence to show that, under the present conditions of breech-loading fire, the change would be a tactical improvement, but rather the contrary.¹³⁸

In August 1873 Robert Home, at the time a Major in the Topographical Department at the War Office, published *A Précis of Modern Tactics*, which he described as a ‘compilation’ from the list of books, mainly by foreign authors, which preceded his first chapter.¹³⁹ He quotes May, Vial and Boguslawski on the significance for the Prussian army of the big company as the main tactical unit, but adds that this is really an unimportant question. The Prussian system is one correct solution, but it is dictated by a relative shortage of officers to men. A better solution is to split a battalion into two wings, each containing four companies of the British size.¹⁴⁰

Home returned to this theme in a memorandum of his own in December 1877.¹⁴¹ In a history of the origins of the big company he explains how the Prussian tradition of

¹³⁸ MacDougall, PL, On the proposal to change the Organization of our Field Battalions from 8 to 4 Companies. PRO WO 33/34, 729-31.

¹³⁹ Home, R, *A Précis of Modern Tactics* (London, HMSO, 1873).

¹⁴⁰ Ibid, 4-7. See also his explanation of how two British companies, working together, would perform in the field. 87.

¹⁴¹ Home, R, (Brevet) Colonel, AQMG, Memorandum on company size, 14 December 1877. PRO WO 33/32/0673.

drawing their officers from the *Junker* class meant that they could only expand the numbers of men in the ranks by reducing the ratio of officers, and cites Beauchamp Walker's reports in 1870 of the evil effects on Prussian efficiency of this comparative shortage of suitable officers. His quotation of Walker's views on the merits of the strong company as the main fighting unit is an interesting recognition of the underlying issues.

If any troops can practise it successfully, they can; this combination of thorough instruction grafted on a cool intelligence renders them more capable of carrying out so scattered a formation than any other troops I have ever seen. ... Although I lean strongly to the Prussian system of strong companies, of giving great authority and responsibility to the Captains, thereby lessening the requirement in field officers and in the regimental staff, I do not quite see how it could be grafted on our present organization without grave injustice; and I am the more inclined to make use of our existing battalion organization than to propose anything new.¹⁴²

Home builds on this to make the points that the French had copied the Prussians for the same reason — a shortage of suitable officers; that conscript armies, having more intelligent men available in the ranks, needed less leading, besides throwing up more good NCO material; and that an army with the heavy colonial commitments of the British needed a higher ratio of junior officers, to lead detachments.

Admirers of the Prussian /German system continued to advocate adopting the strong company formation. During the crucial debates led by Colonel Clive in 1878, he reiterated his support for the German system and said of the British company '.... that we cannot get power of direction in depth *and* front; we must sacrifice either the one or the other — because the company of 100 men is too small'.¹⁴³ Lonsdale Hale agreed.¹⁴⁴ Charles Brackenbury also recognised the tactical merits of the strong company, but put the issue into a practical British context.

I happen to have been a great deal with infantry in actual war, and perhaps you will allow me to state (my own opinions). I believe a large company would be better as a tactical unit in case of continental fighting against a civilised enemy, but the small companies may possibly be better for bush

¹⁴² Ibid, 19-20.

¹⁴³ Clive, 'On the influence', 822.

¹⁴⁴ Ibid, 854. The record states that 'Lieutenant-Colonel Hale, RE, in a few brief remarks, supported the adoption of large companies.' The present writer finds it difficult to decide whether this note expresses relief for uncharacteristic brevity, or an exquisite irony.

fighting, and under these circumstances it is rather difficult to say which we English should choose.¹⁴⁵

Wolseley, who was in the chair, had no such doubts. In a long contribution he warned young officers to guard against being carried away by books and pamphlets, and remember that the basis for the strong Prussian company was their shortage of officers, and he called upon Beauchamp Walker to confirm this; which he did. Wolseley then rehearsed the arguments which MacDougall and Home had included in their memoranda, adding the killing comment that, while there were people like his friend the lecturer who genuinely believed in the tactical benefits of the strong company, most of their supporters were civilians who were strongly biased against army officers as a class, and wished to save money by reducing their number.¹⁴⁶

Wolseley's views will have come as no surprise to his colleagues; he, too, had put them in writing, in a memorandum to the Adjutant-General in March 1877. The arguments were expressed with his usual vigour — 'I regard the fact of our having small companies (100 men) as the only point now in which we are tactically superior to other nations' — but he added a curious qualification. 'Henceforth, battles will be fought with company units, and the larger that unit is the better', with the proviso that it must remain within the reach of control of one commander.¹⁴⁷ Despite this apparent contradiction, Wolseley felt very strongly that the small British company, with its high ratio of officers to rank and file, was a superior formation, and he continued to say so in forthright terms at every suitable opportunity. His article on France for *Blackwoods* in January 1878 fastens upon this issue several times, and includes the trenchant observation that, should the British army ever have to fight a continental foe,

(i)t is the firm belief of those who have themselves commanded British infantry in action, and who are therefore the best judges on this point, that

¹⁴⁵ Ibid, 848-9. His brother Henry would expand on this theme in his own lecture at RUSI. See pages 218.

¹⁴⁶ Ibid, 858-60.

¹⁴⁷ 'Memorandum by Sir G Wolseley on proposal to reduce the number of Companies in a Battalion from 8 to 4,' 6 March 1877. PRO WO 33/34, 195-6. The Adjutant-General vigorously concurred, as his own memorandum of 8 March showed. Ibid, 197-8. Wolseley was still confident that the 'small' British company was '.... the greatest pull we have over the German army' when he wrote to the Duke of Connaught in 1889. Letter, 30 September 1889. Wolseley papers, Hove, PLB 103.

the foreigner, with his four clumsy companies, and without a proper proportion of officers, would be nowhere in such a contest.¹⁴⁸

This was the opinion which carried the day, and no doubt Wolseley's voice was one of the main factors involved. British battalions continued with their traditional structure until the eve of the first World War, and only changed then because there were not enough experienced officers to maintain the old ratio, in a rapidly expanding army.¹⁴⁹

Skirmishers and the firing line. The relationship between skirmishers and the main body of infantry in the field led to much heated debate. Important issues were indeed involved, but to some extent they were masked by misunderstanding about what was actually being described. It will be argued below that two particular expressions which occurred regularly in the works of the German commentators, 'company column' and 'skirmisher swarm', created misleading images in the minds of many British officers, and confused the debate. At the same time, it is clear that those who participated in the debates took it for granted that the works of May, Bronsart, Boguslawski and Scherff were familiar to all.¹⁵⁰

The traditional British battle formation involved the infantry in line, two deep, with a cloud of skirmishers out in front, to harass the enemy — who might be in line or column, similarly screened by skirmishers. These skirmishers were deemed to have done their job when the two main bodies came to grips, at which point they would fall back behind their line and regroup as a reserve. Skirmishers were trained to operate in extended order, usually in pairs, and to make the utmost use of ground cover. The main body, in contrast, were drilled to move in close order, and fire, charge or retire in formation. In attack or defence a shattering volley, delivered at close range, was followed by the charge in line at the point of the bayonet, which settled the issue. The evidence of the wars of the 1860s was that to continue such tactics on the open battlefield led rapidly

¹⁴⁸ Wolseley, 'France as a military power', 16-17.

¹⁴⁹ See Luvaas, *The Education*, 211, footnote 69, for the chronology of the change.

¹⁵⁰ For example, Major Colley, in Brackenbury, 'The tactics', 636.

and inevitably to a level of casualties which could seldom be tolerated. British observers of these wars had certainly seen and reported as much, but it was the arrival of the English translations of the analysis of the 1866 campaign by Prussian soldiers, particularly May and his critic Bronsart, which initiated serious debate in Britain about the implications. As Ouvry said in his preface to Bronsart's riposte to May, 'there can be no doubt that the two pamphlets and this reply will be of infinite service to our Army in the reorganization which must inevitably take place'.¹⁵¹

May emphasised that the 1866 campaign had demonstrated that, despite what the Prussian drill book maintained, attacks by formed bodies of infantry in close order were suicidal. Once the fire fight began, the issue depended on the reinforcement of the skirmishing swarm until sufficient force had been built up to drive an assault home.¹⁵² It was practically impossible, under such conditions, to pull skirmishers out of the line.¹⁵³ Bronsart's reply, widely held to represent the views, and possibly the actual words, of Moltke, accepted that May had made some good points, but was scornful of May's certainty that concerted movements at a higher than company level were no longer practicable. A pamphlet which appeared in English translation in 1873 helped to put these arguments into perspective.¹⁵⁴ It pointed out that the new Prussian drill book, embodying the experience of 1866, had only been issued to senior officers when the 1870 war started, and it was decided that the troops should not be confused by its implementation while the campaign was going on. However, it was doubtful whether the experience of 1870 called for any major revision. The use of initiative was crucial; the skirmishers should take every advantage of the ground, and there should be no 'wooden formations' in the assault.¹⁵⁵

¹⁵¹ Bronsart von Schellendorf, Colonel, *Précis of a Retrospect on the Tactical Retrospect; and a reply to the pamphlet On the Prussian Infantry of 1866*. Ouvry's preface, vii.

¹⁵² May, *On the Prussian Infantry*, ch.2.

¹⁵³ Ibid, ch.10.

¹⁵⁴ 'B, R von', *The Fighting of Today, Written for Young officers*, tr. by Captain EH Wickham, RA, (London, Mitchell, 1873). The author of the original was in fact Premier Lieutenant von Rogalla von Biberstein. It is instructive to note that Lieutenant Maurice, in his 1872 Prize Essay, was already aware of the practical significance of this contribution. See his booklist and reference in the text. Maurice, 'The system', ix and 16.

¹⁵⁵ 'R von B', iii-v. He was in no doubt that there was nothing to be learnt from either the American War or '.... fights of a small war'. viii.

As to whether, in practice, the Prussian skirmishing line was the fighting line, Lieut.-Colonel EW Bray was in no doubt. He was one of the group of officers sent to observe the Prussian manoeuvres of 1868, and his report was unqualified. 'We use skirmishers to cover a movement, the Prussians use them to fight, which is a great difference, and requires different management.'¹⁵⁶

As books and pamphlets about the Franco-German War began to appear in increasing profusion, their impact on British military thinking was immediate. The vigour of the lectures and debates, particularly in 1872, 1873 and 1874, illustrates this clearly. Charles Chesney referred to the ready availability of Lumley Graham's translation of Boguslawski's *Tactical Deductions from the War of 1870-71* in a debate at RUSI in July 1872. The events of this later war, he said, did on the whole reinforce the validity of what May had been saying about infantry tactics, and made it clear that it was imperative for the British army to modify its drill accordingly.¹⁵⁷ (Boguslawski demonstrated the practical impossibility of operating in close order when near the enemy. Generally, in attack, the supports and the skirmishers would simply become mingled, and under such conditions it was impossible to manoeuvre in formation, or fire volleys.¹⁵⁸)

The following May, 'by special request of the Council', Henry Brackenbury also delivered a lecture at RUSI, and his opening remarks laid down clear markers for the debate which was to follow. 'We have now arrived at a period when the necessity for some change in tactics, as they have been practised by the British Army, is generally, I will not say universally, acknowledged.'¹⁵⁹ This was intended to be an important debate, as he recalled in his memoirs many years later.

¹⁵⁶ Bray, Lieut. Colonel EW, 'The Prussian mode of conducting large manoeuvres', 2 Feb. 1871, *Proc RAI*, vol. 7, 358.

¹⁵⁷ Chesney, CC, 'The theory and practice of peace manoeuvres with their relation to real warfare', 18 July 1872, *JRUSI*, vol. 16, 1873, 550-74.

¹⁵⁸ Boguslawski, Albrecht von, *Tactical Deductions from the War of 1870-71*, translated by Colonel Lumley Graham, (originally published in London by HS King, 1872), new ed. (Minneapolis, Absinthe Press, 1996), 66-7.

¹⁵⁹ Brackenbury, Captain H, RA, 'The tactics of the three arms as modified to meet the requirements of the present day', 31 May 1873, *JRUSI*, vol. 17, 1874, 618-47, 618.

It is a proof of the spirit which was stirring the dry bones at this time that the Council of the Royal United Service Institution were anxious to have a lecture delivered at their theatre in Whitehall on the changes which the Franco-German War had shown to be needed in the tactics of our army. Probably never before or since have so many officers of great distinction taken part in a military discussion in that theatre.¹⁶⁰

In the lecture, stressing how battlefield tactics must change, he needed to give

.... some examples; and here I would venture to remind you that as the British Army is without practical personal experience of the effect of these modern weapons in battle, we must borrow from the experience of other armies.¹⁶¹

He was soon quoting the changes in the Prussian drill book (available in Colonel Newdigate's translations) arising from their experience in the late war, to show that the normal fighting formation was now the company column, with the skirmishers being reinforced as necessary, and (his emphasis) '....*this shooting line is the fighting line.*'¹⁶² There was no place for the traditional line in close order, under such conditions, but in practice the Prussian company columns, '....small bodies moving in formation only four ranks deep if the skirmishers are out, (are) nothing but the line four deep, with which our Guards and our 52nd Regiment repulsed the French advance at Waterloo.'¹⁶³ Battlefield control had to be exercised in depth, not width, and officers at company level must be prepared to accept this responsibility.

In the event, Brackenbury's introductory comment that the need for tactical change was 'generally' but not 'universally' acknowledged was born out by the debate which followed. Several officers present, including Major Colley and Lieutenant-General Sir Lintorn Simmons, supported his argument that the British army must adopt tactics based on using skirmishers in extended order to engage the enemy until their numbers could be sufficiently reinforced from behind to press home a successful assault, and that this meant that tactical control could not be exercised over a unit of more than Prussian company strength.¹⁶⁴ On the other hand, there were others whose attention, perhaps because they

¹⁶⁰ Brackenbury, *Some Memories*, 219, 222.

¹⁶¹ Brackenbury, 'The tactics', 621.

¹⁶² *Ibid*, 625.

¹⁶³ *Ibid*, 623.

¹⁶⁴ *Ibid*, Colley on 636-7 and Simmons on 643-4.

misunderstood the significance of the expression ‘company column’, was diverted from the real issues.

It was difficult for a generation of officers, brought up on the confident tradition of the superiority of the disciplined British line over the tightly packed columns of revolutionary and imperial France, to avoid placing the emphasis on the second word of that expression rather than the first. As a result there was considerable debate about whether or not the assault by the Prussian Guard, in close order at divisional strength, at *St. Privat* could be taken to show that ‘.... the old charging tactics formed the only effectual method of attack calculated to ensure victory’.¹⁶⁵ Naturally, it was generally agreed that such massive columns would never succeed against a British line. For Brackenbury, as for May and Boguslawski, this was not the issue. Their emphasis was on ‘company’, not ‘column’. Their point was that the company was the tactical unit, not that it had to operate in a dense mass. Even the well-read and thoughtful Maurice seems to have been misled. In a footnote in his Prize Essay he says that the casualties at *St. Privat* led to ‘(t)he abandonment by the Prussians of the special form best known in England of even their company columns’, when what was actually being abandoned was the idea of large bodies of troops attacking in massed formation.¹⁶⁶

On the other hand, Brackenbury’s remark about the similarity between the reality of the formation of a German company column on the battlefield and the British line repelling the French Guard at Waterloo was seized upon by other officers to suggest that there was no material difference between the new Prussian tactics and traditional British practice. Sir William Codrington said as much,¹⁶⁷ and Major-General M’Dougall (sic) declared firmly that ‘....(i)n the English service, the fighting unit is the battalionI believe that it will be found that a much slighter dislocation than is frequently proposed of our present drill system will entirely effect the object required’.¹⁶⁸ On the subject of

¹⁶⁵ Ibid, 639. Simmons had already drawn attention to the tendency to misunderstand the meaning of ‘column’ during Charles Chesney’s 1870 lecture on ‘The reform of Prussian tactics’, 250.

¹⁶⁶ Maurice, ‘The system’, footnote, 29.

¹⁶⁷ Brackenbury, ‘The tactics’, 642-3.

¹⁶⁸ Ibid, 640. This was PL MacDougall, by no means a stick-in-the-mud, but strongly determined that the battlefield should not degenerate into a series of disconnected brawls, as shown by his earlier approval of

infantry tactics, therefore, it has to be admitted that the debate, though important, was indecisive. Accordingly, Charles Brackenbury (in the absence abroad of his brother) tried hard to establish some kind of common ground, in a note appended to the printed proceedings, preaching

the necessity for instituting a drill which shall teach steadiness in attacking upon the principles now stated, — principles not by any means adverse to that held by England when she set her lines against the continental columns, but, on the contrary, natural growths from the root of the line idea.¹⁶⁹

It was at least accepted that the tactical formations developed by the Prussians should be tested. The Commander-in-Chief in Ireland made this clear in a memorandum *On the New System of Drill*, published in Dublin in 1873.¹⁷⁰ He was in no doubt that the new German tactics were right.¹⁷¹

The Superintendent of Garrison Instruction at Aldershot also quoted approvingly from Boguslawski — ‘Great clouds of skirmishers and small tactical units, that is the form for infantry’ — but he was happy that the British army was changing its tactics

slowly but surely; not slavishly following those of Prussia but adapting them to the constitution of our army and our national characteristics; at the same time taking full advantage of the greater war-experience of our neighbour, and which it would be folly to ignore.¹⁷²

This was the case for tactical innovation. The case for retaining the traditional British system, clearly dear to the hearts of those who had spoken against change at the

Scherff's criticism of May for advocating ‘.... fighting like a horde of savages’, ‘On the proposal’, 730. MacDougall developed his argument in a pamphlet published that same year, *Modern Infantry Tactics* (London, Stanford, 1873).

¹⁶⁹ Ibid, 646. Maurice, in his essay ‘The system’, points out throughout that Colonel Gawlor's *The Essentials of Modern Skirmishing* of 1837 anticipates many of these tactical principles.

¹⁷⁰ Mansfield (Sandhurst, General the Right Hon. the Lord), *Memorandum on the New System of Drill* (Dublin, Alexander Thorn, 1873). 3. H Brackenbury had mentioned these experiments in his lecture ‘The tactics’, 627, and a paper by Colonel Edward Newdigate, *An Analysis of the ‘Formations for Attack on the Half-Battalion System’* written on 4 November 1873 (London, Mitchell, 1873) referred to this system being ‘.... practised experimentally by the troops’ and to be reported on, 3. He thoroughly approved of the German approach, and concurred with Brackenbury in thinking the half-battalion too big for control, 14.

¹⁷¹ Ibid, 5.

¹⁷² Middleton, Lieutenant-Colonel F, ‘Changes in tactics consequent on the improvement of weapons and other circumstances’, Tuesday, 27 February 1873 at RUSI. *IHR Military Pamphlets*, vol.16, no.5, 10.

Brackenbury debate, was to be put more coherently in a lecture in Calcutta.¹⁷³ In this the future Lord Chelmsford revealed a commendable acquaintance with the latest foreign writing on the continental wars. He relied particularly on Lumley Graham's translation of v. Scherff to '.... deprecate the introduction of the "Order in Disorder" system, and the skirmisher swarm formation'.¹⁷⁴ Thesiger's concern was that control must be maintained at battalion or at least half-battalion level, and he was delighted to discern from Scherff '.... how entirely he differs from those of his brother officers, who advocate the absolute independence of the company unit, and the skirmisher swarm formation', because he talked in terms of keeping the main body intact for the decisive moment.¹⁷⁵ That, Thesiger triumphantly explained, was '.... almost exactly in spirit that which the British army has been accustomed to for many years past, only modified to meet the requirements of the day'.¹⁷⁶ Skirmishers who had played their initial part could not be expected to join in the assault, in close order, of the traditional line.

In much of the rest of the lecture Thesiger found himself at odds with Scherff, and it may be that he read more into Scherff's criticisms of May and Bogslawski than was justified. There can be no doubt that he was completely misled when it came to assessing the merits of the actual German skirmishing tactics, and, since he was so concerned with the necessity for control to be maintained, the explanation may lie in the use of the word 'swarm'. The English connotations of this word do call up a mental picture of disorder, of a milling throng, indeed of what Scherff had accused May of describing, 'a horde of savages'.

¹⁷³ Thesiger, Lieut.-Colonel and Brevet-Col. The Hon. Frederic, CB, ADC to the Queen, local Major-General, and Adjutant-General in India, *Is a Radical Change in the Tactical Formation of our Infantry really Necessary?* Subsequently printed in *JRUSI*, vol. 17, 1874, and published in Dublin (no date). *IHR Military Pamphlets*, vol. 13, as *No Radical Change*

¹⁷⁴ Ibid, 1.

¹⁷⁵ Ibid, 2.

¹⁷⁶ Ibid, 3.

However, when applied to the German infantry tactics, this was a misconception, as the Prussian regulations make clear. These were published in English in 1872.¹⁷⁷ In the section on ‘General Principles for Infantry Formation’ the translation reads

2. After a division of skirmishers has been moved to the front, the word ‘Extend’ (Schwärmen) is given, upon which only one section disperses in open order, unless a larger number of sections be specifically ordered to extend simultaneously. Each successive time the word ‘Extend’ is given, another section opens out.

If the line of skirmishers has to be reinforced, at every successive order to ‘Extend’ one section of the division of skirmishers extends on the right or left flank of the line according to the special orders it receives.

Those British officers who hated a ‘swarm’ would surely have found ‘a line of skirmishers extending into open order by sections and on command’ a less disorderly concept, and this might have led to a more ready acceptance of the underlying principles. Robert Home, in his *Précis of Modern Tactics*, drawing heavily on the available foreign sources, shows quite clearly that he is alert to the problem. In a long passage regretting that the expression ‘loose order’ has come into common usage he quotes from both Beauchamp Walker and King William of Prussia to show that

There is no counselling of loose formation, no urging of wild swarms of skirmishers out of hand, but there is a word of warning against premature attack, against pushing battalion columns on the top of skirmishers, and a gentle admonition to adhere to the company column, the proper recognised Prussian formation for such attacks.¹⁷⁸

At all events, those responsible for teaching tactical principles to young officers were able to distil a reasonable compromise out of the contending opinions. In *Minor Tactics* Clery’s chapter on the ‘principles of employment of infantry’ finishes a historical analysis by acknowledging that the 1866 war proves that firepower, rather than the bayonet charge, has become the decisive factor.

For the different actions of this campaign may be said to have been gained by infantry — not by the shock of columns, but by the fire of skirmishers. That is, those bodies of infantry that had hitherto followed the skirmishers

¹⁷⁷ Baring, Lieutenant E, RA, (tr.) *The Elementary Tactics of the Prussian Infantry* (London, HMSO, 1872). At this time the great pro-consul was a rising young officer at the Topographical and Statistical Department of the War Office. His linguistic skills and influential connections had not yet persuaded him that the world of diplomacy offered him a more glittering career.

¹⁷⁸ Home, *Précis*, 77.

in compact order now became dissolved during the action, and gradually pressed forward to fight in the skirmishing line.¹⁷⁹

He accepted that this mode of fighting brought with it that risk of disorder which Thesiger and others so deprecated. Accordingly, his model for infantry formations embraced the principle expounded by the Prussians, of deployment in depth to provide the steady reinforcement of the firing line, but applied it on the basis of the whole battalion remaining under the tactical control of its commander.¹⁸⁰ This was to remain the pattern for the British infantry for the rest of the century.

Flexibility in the field. The size of units, the relative numbers and configurations of skirmishing lines — however contentious — are but necessary preliminaries; how the formations are to be used on the battlefield decides the outcome. Those who believed that it was possible to attack an undemoralised enemy in open country by head-on assault still spoke of bringing brigades, and even divisions, in close order (and therefore still effectively under the tactical control of their commanders) into decisive contact. ‘The object is to bring our strength close to the enemy. The issue must be decided, now as heretofore, by the threatening advance of superior numbers ready with the bayonet.’¹⁸¹ Given such a belief, there was little need for further consideration about the tactical use of smaller units.

Those who, on the other hand, had absorbed some of the lessons of the continental wars, no longer put their faith in such methods. They looked for practical ways, as Henry Brackenbury put it, to substitute ‘a flexible chain for an iron bar’.¹⁸² This involved distilling three elements from what was being written about the wars in question; the use of ground, the merit of attacks on the flanks rather than the front of the enemy, and the need for flexibility. (They also emphasised the need for positive co-operation between the fighting arms, but this will be examined later.) These were all activities which depended

¹⁷⁹ Clery, *Minor Tactics*, 100.

¹⁸⁰ Ibid, 102-10.

¹⁸¹ Williams, Lieutenant-Colonel WJ, RA, ‘On infantry tactics’, *JRUSI*, vol.16, 1872, 769.

¹⁸² Brackenbury, H, ‘The tactics’, 623. Apparently this metaphor owes its origin to Baron Ambert. See Maurice, ‘The system’, footnote, 37.

for their success on leadership at the most immediate level, and this required the use of initiative, as against unthinking adherence to the patterns of rigid drills or even the overriding orders of commanders who would not be in contact at critical moments.

Charles Chesney was among the first to appreciate this. In October 1870 he cited particularly the Prussian Prince Friedrich Carl's *Military Memorial* of 1861 to show that Prussian regulations already allowed for the use of initiative under battlefield conditions. 'They aim at being no more than a general guide for the use of intelligent agents, for thoughtful and well-trained leaders.'¹⁸³ In December he returned to the theme in his lecture at the RAI. The proceedings quote him as saying that '....the Prussians were fully aware of the impossibility of teaching tactics by rule', and that '.... the new Prussian tactics assumed that an officer in command of any force was possessed of certain intelligence, and gave him considerable latitude'.¹⁸⁴

The importance of this lesson was just as clear to Henry Brackenbury's brother Charles.

Wherever you search in Prussia, in office, factory, University or Army, you will find the same ever present virtues --- simplicity, organization, and discipline. But above all, every man in Prussia, from the Sovereign to the "boots" at an inn, has been taught and encouraged to think for himself. This is especially true of the Army and its Officers,....¹⁸⁵

In September 1871 Beauchamp Walker sent a copy of the revised German regulations with one of his despatches, in which he strongly emphasised the importance of this principle.

The whole regulation, as I before remarked, breathes the spirit of Prussian manoeuvring which is based on a thorough instruction of the officers and a practical instruction of the men, so that a far greater latitude and independence is accorded to individuals than is the case in our service. It is the habit of self-reliance gained as a captain which makes the transition to the command of a battalion so easy to the Prussian officer, and it is this habit of self-reliance when in independent command which admits of their

¹⁸³ Chesney, 'The campaign of August, 1870', 484.

¹⁸⁴ Chesney, 'The reform of Prussian tactics', 240,243.

¹⁸⁵ Brackenbury, CB, 'The military systems of France and Prussia in 1870', *JRUSI*, vol. 15, 1871, 233.

system of fighting in extended order, and of risking so much in feints and flank attacks.¹⁸⁶

Much of Henry Brackenbury's 1873 lecture was devoted to the same issue. He stressed the way that the Prussian regulations had been progressively modified since 1861 to recognise the need for flexibility on the battlefield, in order to take advantage of the lie of the land and seek out the weaknesses in the opposing position, which generally involved feeling the way onto the enemy's flank.¹⁸⁷ This was only possible if junior officers were encouraged, and trained, to exercise their initiative. That was the crucial point, which he reinforced by quoting from a letter which he had received from the Wellington Prize winner, Lieutenant Maurice. 'I think, when you have read my essay, you will see what I meant by saying to you that the cultivation of a habit of independent action is our great tactical necessity.'¹⁸⁸ Home had drawn the same moral from his authorities. 'And the king (of Prussia) points out that the intelligence of the individual officers must be exercised; within certain limits, each man must have individual freedom'¹⁸⁹ Maurice contrasted this freedom with the rigid prescriptiveness of the British regulations in a forceful footnote in his Prize Essay.¹⁹⁰

Thoughtful soldiers, then, had no difficulty in accepting that, because the shape and size of the battlefield had changed, the outcome would depend more heavily than before on the responsiveness of the leaders of small tactical units; that is to say, junior officers. The reaction of traditionally minded officers was more equivocal, and it is curious to see how they struggled to reconcile their understanding that the tactics of successful continental armies had changed with their anxiety to preserve the steadiness and ordered discipline of the professional British battalions. One of the paradoxes of the time is that many of these officers will have seen numerous occasions when the exigencies of colonial warfare had thrown crucial responsibilities onto the shoulders of relatively junior officers; yet they could not easily accept that continental warfare would create similar

¹⁸⁶ *Extracts from the Reports*, PRO WO 147/23, 36.

¹⁸⁷ Brackenbury, 'The tactics', 622 et seq.

¹⁸⁸ Ibid, 626. This is one of the strongest themes in Maurice's Essay, 'The system'. 38-43.

¹⁸⁹ Home, *Précis*, 77.

¹⁹⁰ Maurice, 'The system', 70-1.

situations — or that, if it did, these juniors would need to be prepared for it. Soldiers like Thesiger continued to wrestle with the evidence of the continental writers in order to justify their conviction that really there was nothing new at stake, and the British battalion in line was still the master of the battlefield.

Opposition to what the Brackenburys and Chesneys were saying also included objecting to their suggestion that it was necessary to *teach* anything about tactics to junior officers. During the debate on Brackenbury's lecture General Lord de Ros managed to articulate this attitude in two different (and almost contradictory) ways, and his contribution so admirably summed up the conservative viewpoint that it justifies quotation at length. First, he objected to the idea that a British officer could have anything to learn.

In alluding to the responsibility necessary, which (Brackenbury) thinks ought to be thrown, upon the Junior Officers in action, he seemed to question whether our young Officers were sufficiently trained and acquainted with their duty to be trusted with this responsibility. Now, I know it is the fashion of the present day to say our young Officers are ignoramuses, and that they have everything to learn — that the French, Prussians, and Austrians are all greatly superior in education to our young Officers, and possess a far more extended knowledge of their duties. I entirely and wholly repudiate that idea. I have been more than 52 years in the British Army, and I never have known of a young Officer called upon in any position who did not fully respond to all that was demanded of him.

Then he argued that, in practice, such responsibility was dangerous.

Is there no similar danger if you tell young Officers that they are to be totally independent of their Lieutenant-Colonels and are to go here and there exactly as they may fancy the ground most suitable? Is there no danger of their going far beyond or far short of what was intended? I think there is great risk in this, and I also think it is quite impossible for Officers on foot to command more than 150 men in the field. I do not care whether they are Captains or Lieutenants, it does require the activity and wider view of the mounted Officer to command men in action to any extent. An Officer on foot, no matter how quick in his movement or how loud and clear in voice, is lost; nobody can hear him, nobody can see him at any distance, or in any confusion, and I cannot think that it would be possible to give this independence of command to Captain's subalterns unless they were mounted in the field.¹⁹¹

¹⁹¹ Brackenbury, 'The tactics', 637, 638.

Edward Hamley, who followed de Ros in the debate to give warm support to Brackenbury's call for appropriate training, felt constrained to add a few words of advice which were perhaps more barbed than their ostensible message first suggested.

To those who very naturally cling to our old traditions endeared to them as they are by so many glorious recollections, and handed down through generations of zealous and excellent Officers, I would, in the face of impending changes in the system which they love, suggest this consolation. Nobody can say of that system that it was calculated to develop in a high degree the intelligence of Officers or of men. A regimental career of 20 or 30 years passed in the practice of such exercises as we are all familiar with, far from fitting a man for responsible command, rather tended to dwarf and narrow him; its tendency was to reduce the man of resource, energy, and ability to the level of the dull man of routine. And therefore it was that many of us have seen Generals who appeared unable to rid themselves of their regimental recollections, and who, instead of fulfilling their proper duties, seemed to find their highest zest in that kind of supervision of their troops which is best left to the company Officers, or even to the sergeant-major.¹⁹²

A directive entitled 'Attack formation of a battalion', issued with General Order 40 of 1876, shows that there was now at least recognition of the need to give responsibility to company officers once battle was joined.

Officers commanding battalions, although retaining the general superintendence of the movement, must remember that it would be impossible in war to issue fresh instructions to Company-commanders after the attacking line is once engaged. They should therefore impress the Captains with a sense of the responsibility of their position, accustom them to considerable freedom of action, and, — so far as is compatible with due instruction, and the carrying out of the general directions previously given — interfere as little as possible with them when manoeuvring.¹⁹³

Wolseley, in his long letter to the Duke of Connaught on 30 September 1889, commenting that the drill book continued to be rewritten, gave some acknowledgment that it did provide scope for tactical flexibility, but recognised the problem which the army must solve if this was to have any practical significance. 'Every latitude is however

¹⁹² Ibid, 638.

¹⁹³ 'Attack formation of a battalion', with GO 40 of 1876, 4.

given to Commanders to do as they conceive best at the moment.' The problem was that latitude alone was not sufficient.

Where the German Army is so infinitely superior to ours is in the military knowledge and earnestness of its officers They are always preparing their men for war by teaching them what they will have to do in war. They pay little attention to the fiddle-faddle trumpery details of mathematical drill exactness of appearance that our old fashioned Generals still delight in. They go for the excellence of the picture itself, we are always polishing up its frame.¹⁹⁴

'Teaching them what they will have to do in war' was what the army must strive for, if flexibility on the battlefield was the goal; and Wolseley was clear that this was still not being effectively achieved in 1889.

Artillery

Considering the great interest generated by the technical progress in gun design, the amount of discussion in the British army about the tactical implications for artillery, in the early years of this period, is disappointing. Sir John Headlam, in his introduction to *The History of the Royal Artillery*, called it a 'most puzzling enigma' that this generation of gunners was so slow to recognise the impact of the new weapons. He put this down to a combination of innate caution and over-centralised control, which led to an insistence on precision of drill at the expense of good gunnery, and in his view it was only the appearance of Prince Kraft's *Letters* in English translation in 1887 which '.... opened the eyes of all to what rifled guns could do in the hands of gunners who knew how to use them'.¹⁹⁵ The 1860s do rather support his argument but, given the calibre of discussion from 1870 onwards — and some of the actions taken during the following decade — this judgment now seems unduly harsh. It will be shown later in this chapter, for instance, that

¹⁹⁴ Wolseley papers, Hove, PLB 103.

¹⁹⁵ Callwell and Headlam, vii-viii. Cyril Falls says much the same in his preface to Görlitz, Walter, *The German General Staff* (London, Hollis and Carter, 1953), x-xi.

Prince Kraft's opinions on the tactical use of artillery were well known to, and discussed with approval by, many British soldiers in the immediate aftermath of the Franco-German War.

However, the start was indeed slow. Colonel Dixon had predicted in 1857 that artillery would have '.... a great preponderance in determining future battles',¹⁹⁶ but Charles Chesney, whose description of the disappointing performance of American rifled guns was noted in chapter three, could not bring himself to agree that such weapons had been a decisive factor in what he (at the time — early 1866) felt to be the more instructive war of 1859.¹⁹⁷ When he came to give his talk on 'The reform of Prussian tactics' just after the crushing victories of German arms in 1870, he did praise May's recognition of the tactical exploitation of the German artillery but, considering that the venue was the Royal Artillery Institution, it is significant that he did not have more to say on the subject — and that it fell to one of the many gunner officers present (Major Geary) to initiate a discussion about the advantages of mobility conferred by the Prussian practice of providing seats for the crews on the axle-trees of the guns.¹⁹⁸

Nevertheless, 1870 was a watershed, and four commentaries contributed to a renewal of intense interest in continental artillery practice. May's *Tactical Retrospect* became available in English, and the translations of Baron Stoffel's famous reports began to appear in the pages of *Fraser's* a year later. Both these works had been written before the outbreak of the Franco-German War, but their appearance at this stage helped to focus the minds of soldiers, anxiously evaluating that surprising campaign, on the reasons for the German success. May, writing from the point of view of a regimental infantry officer, was naturally critical of the performance of the Prussian artillery (and cavalry) in 1866, but the predictions which he made from his observations were important.

In the next war that side will obtain an unconditional tactical preponderance which best knows how to make use of its artillery, or rather that side which does not put off this practice till the moment that the war

¹⁹⁶ Dixon, 113.

¹⁹⁷ Chesney, 'Recent changes', 122-3.

¹⁹⁸ Chesney, 'Reform of Prussian tactics', 249.

commences, that is, the side whose artillery has had the best tactical training.¹⁹⁹

Those tactical lessons were clear; in order to use guns to the best effect, they must be *risked*, not held back, they should be grouped, preferably on the flanks of the infantry, and they must be trained to work closely with the other arms.²⁰⁰

Stoffel was similarly prescient. The common assertion that the Prussian artillery had been inferior to the Austrian in 1866, he said, was dangerously misleading. The Prussians were then in the process of re-equipping. His government should take due note of '(t)he vast superiority of the *matériel* of the field artillery in point of accuracy, range, and rapidity of firing', and that '.... Prussian artillery officers are better educated and more instructed than the Austrian'.²⁰¹

The Topographical Department's digest of all the reports of the military attachés, issued in 1871, started with a section on artillery, which drew particular attention to the tactical improvements which the Prussians had introduced as a result of the disappointing performance of their guns in 1866. While it dwelt heavily on the superior killing qualities of the Prussian percussion fuses compared with the French time fuses, it also stressed the value of two tactical changes; keeping the guns well to the front in the line of march, so that they could be deployed rapidly; and concentrating the batteries where they could be used together to the greatest effect, without having to move position.²⁰²

The fourth, and most professional, contribution was that of Prince Kraft zu Hohenlohe-Ingelfingen, who had commanded the Prussian Guards artillery in 1866. As Headlam said, Hohenlohe's best known works, the famous *Letters*, did not appear in English until the 1880s. However, his radical views on the use of artillery in the field had been available to a British audience at least since 1872, when Captain FCH Clarke, RA,

¹⁹⁹ May, *Tactical Retrospect*, ch. 7, 41.

²⁰⁰ Ibid. His ch. 6 discusses both the failures of the artillery in 1866 and the need for close mutual co-operation, ch. 8 the risk factor, and ch. 9 the tactical dispositions.

²⁰¹ Stoffel, 543.

²⁰² *Extracts from the Reports*, 2.

published his translation of an earlier work, *On the Employment of Field Artillery in combination with the other arms*.²⁰³ This set out all the principles which the Prussians had distilled from their experience of 1866 — the need to have the guns near the front of the column on the march, so that they could intervene quickly in an encounter battle; recognition that they must be risked when necessary; the advantage of concentrating them, preferably on the flank; understanding that, while briskness was always desirable, accuracy of fire was vital; above all, that the objective was to combine with the infantry and cavalry in order to achieve a decisive result. There was no doubt in Clarke's mind of the importance of the pamphlet.

The marked improvement in the efficiency of the Prussian Field Artillery since the year 1866, due in a great measure to a more correct recognition of its just employment in the field, has been so conspicuous in the recent campaign, that the translator has deemed the reflexions of one who has contributed in no small degree to the progressive changes affected in this branch of the service during the interval, worthy of a wider circulation in this country.²⁰⁴

This wider circulation was quickly noted. Maurice's Prize Essay of 1872 includes Clarke's translation in its formidable booklist, and cites Hohenlohe's opinions, and often Stoffel and Boguslawski as well, whenever he is considering either artillery alone or the combination of all arms. On 'the attack', for example, he says that '.... the Prussians have adopted a principle very new to military rules. They have decided that, in order to win victory, it is well worth while to run the risk of losing guns'.²⁰⁵ Many years later, when he was writing at large about *War*, his section about artillery tactics still referred to Hohenlohe as *the* authority and reiterated the salient tactical points.²⁰⁶ Similarly, Captain Fox Strangways based most of the shrewd tactical proposals in his 1872 lecture on these same principles, though, with the self-confidence arising from his own professional

²⁰³ Kraft, Prince of Hohenlohe-Ingelfingen, *On the Employment of Field Artillery in combination with the other arms*, authorised translation by FCH Clarke (London, Mitchell, 1872). Pamphlet originally published as *Ideen über die Verwendung der Feld-Artillerie* (Berlin, 1869). Another gunner officer, Captain WG Brancker, had also read and assimilated Hohenlohe's principles in the original, and was able to write about them in March 1871. See 'Notes extracted from some German pamphlets on the employment of artillery in the field', *Proc RAI*, vol. 8, 8-13.

²⁰⁴ *Ibid*, translator's preface.

²⁰⁵ Maurice, *The System*, 142. See also pp 63-66, for his general acceptance of Hohenlohe's principles.

²⁰⁶ Maurice, *War*, 69-79.

experience, he did not accept them all without question.²⁰⁷ What he did accept unreservedly (the constant refrain running through the writings of thoughtful soldiers) was the need to study the lessons to be learnt from actual combat, teach the tactical lessons, as the Prussians did, and not just concentrate on ‘drill and internal economy’.²⁰⁸

The artillery section of Home’s *Précis of Modern Tactics* draws all the same conclusions but surprisingly (bearing in mind that it quotes so heavily from the German writers) quotes Hohenlohe only once.²⁰⁹ Henry Brackenbury, on the other hand, advanced Hohenlohe’s principles in great detail in the debate on tactics previously referred to, and showed how they had been applied to such good effect in the war of 1870-71, supporting his arguments by citing a paper given by Colonel Smythe at the RAI and the observations of the French General Frossart.²¹⁰ The Royal Artillery were clearly studying all these developments with a sharp interest, and another illustration from the early 1870s will confirm, not only this, but also the steadily recurring theme of the recognition of Britain’s special situation. The RAI set as their Prize Essay subject for 1874 ‘The constitution and duties of the artillery of an advanced guard of an army in the field’. The peroration of the winning entry included the following words;

Without assuming that everything is good that emanates from the Prussian Bureau, it cannot be denied that Germany initiated the modern reforms in tactics, and still preserves the lead Continental nations are in every instance following its steps, and England must perforce do the same; taking care to recognise that, under the peculiar circumstances of her national position, a modification of continental forms of warfare will be, in general, necessary.²¹¹

Further afield, Frederic Thesiger’s lecture in Calcutta included Hohenlohe’s experience among the German authorities cited.²¹² By this stage so much had been written about the influence of artillery on the outcome of the recent continental wars that

²⁰⁷ Fox Strangways, 154-5. These two pages summarise both the principles and his criticisms.

²⁰⁸ Ibid, 158.

²⁰⁹ Home, *Précis*, 133.

²¹⁰ Brackenbury, H, ‘The Tactics’, 631-5. References to Smythe and Frossart on 632.

²¹¹ Pratt, SC, ‘The constitution and duties of the artillery of an advanced guard of an army in the field’, *Proc RAI*, vol.8, 1874, 468-85, 485.

²¹² Thesiger, ‘Is a radical change’, *JRUSI*, vol.17, 1874. He spells the name wrong, but knows the Clarke translation, 416.

it was possible to support almost any tactical theory from some part of the literary canon. Thesiger's interest was in infantry rather than artillery, and he used Hohenlohe to show how vulnerable the guns were to modern infantry fire if they got close to the firing line.

Colonel Ouvry and Charles Brackenbury, on the other hand, both stressed the success which the Germans had achieved by using their artillery boldly, and risking the loss of guns when necessary; and Clery's lectures drove home the same message with suitable illustrations from 1870.²¹³ When Brackenbury wrote, in 1878, the feeble showing of the Russian artillery at Plevna could be contrasted with the concentrated aggression of the German guns at Vionville and Sedan. The merits of using the increased range of modern artillery in order to mass and direct its fire were not overlooked, but Brackenbury reported how experiments at Okehampton were demonstrating that artillery used at close range was decisively more murderous. He added, rather cold-bloodedly, that casualties amongst troop horses, and for that matter among officers and men, might be high, but the experience of the Franco-German war showed that the equipment seldom suffered much damage.²¹⁴

Brackenbury was arguing specifically for the fitting of shields to field guns. The debate about the influence of modern firepower, at RUSI in May 1880, devoted much of its attention to the same theme. Lonsdale Hale, inevitably, reiterated his accurate statistics about the killing power of field artillery to support the case for risking the guns at close range, Brackenbury repeated his call for gun shields, and James (whose paper had opened the occasion), although uneasy about Hale's figures, gave active support to the general argument for operating the guns at the decisive close range. Used in this way and properly equipped, he said, artillery would inflict as much as 40 per cent of all battlefield casualties in the next war.²¹⁵

²¹³ Ouvry, 'A review', 449. Brackenbury, CB, 'Ironclad field artillery', *The Nineteenth Century*, vol.4, 1878, 41 et seq. Clery, 144.

²¹⁴ See also Murray, Lieutenant AM, RA, 'Russian artillery tactics during the late campaign', *Proc RAI*, vol.10, 1878, 379-87, and Captain Elles, 'On the question', 561-4, for very similar views.

²¹⁵ James, 'Modern fire', 401-3. Hale's contribution is on 398 and Brackenbury's 396-7.

The attractions of this line of reasoning were clear to adventurous young officers, with consequences which were referred to in the section dealing with the dangers arising from a growing doctrinal stress on the merits of the offensive.

Co-operation

Increasingly, the boldness and co-operation in action engendered by professional confidence and mutual trust were the qualities which British observers detected as the explanation for the German army's success on the battlefield. Exemplifying this, Henderson, writing in 1892, quoted a general instruction issued by General v. Steinmetz to 1st Army at the beginning of the Franco-German War, which could equally have stood as a statement of British naval doctrine at any time since Nelson's day.

When and wherever we meet our enemy he must be attacked with the greatest vigour The excuse for doing nothing that no orders have been given will never hold good, so long as firing can be heard; every body of troops should march in that direction, and as soon as they are on the battlefield ascertain how the battle is going, in order to be able to join in it in the most effective manner.²¹⁶

Maurice's Prize Essay stressed throughout that this essential spirit could only be achieved by soldiers who had worked and trained together long enough to develop a true feeling of *camaraderie* at all levels, and he was still repeating the lesson in a lecture at Aldershot twenty-three years later.²¹⁷

The message that this ingrained ability to work together was the key to tactical success; that it was not to be confined to any one arm, but must extend across the whole service, was seized on by many of the British writers on tactics, including Charles

²¹⁶ Henderson, Major GFR, 'Précis of the regimental history of the 33rd East Prussian Fusiliers in the war of 1870-71', *JRUSI*, vol. 36, 1892, 73.

²¹⁷ Maurice, *The System*, particularly 66 and following pages, and 'How far the lessons of the Franco-German War are now out of date', *USM*, vol.10 ns, 1895, 563-4.

Chesney, Lonsdale Hale and Robert Home.²¹⁸ It was clear to them all that the British army had much to learn if it hoped to meet a continental army on equal terms, but that it would only develop these desirable characteristics if its leaders at all levels could be suitably trained in the necessary techniques, and made thoroughly familiar with them by practising them together in regular large-scale manoeuvres.

Efficiency on the battlefield, then, was not simply a matter of copying the evolutions of continental tactical units; it was much more a question of developing a new approach to preparing the army as a whole for war on a scale of which it had no experience. In the final chapter an attempt will be made to pull the threads together, and reach some conclusions about the extent to which this was actually achieved in the years following the continental wars.

²¹⁸ Chesney, 'Reform of Prussian tactics', 246. Hale, 'The spirit of the military training in the German army', *Macmillan's*, vol.38, May 1878, 48-57, and 'Notes on the German military system', *Macmillan's*, vol. 38, July 1878, 221-32. Home, *Précis*, 145-51.

In 1859 the British army was under pressure; struggling to correct the manifest faults in organisation and structure revealed by the Crimean War; stretched to the limit to find sufficient resources to support its commitments in India and China; and confronted by the possibility of an invasion from France. When the threat of an attack on the Canadian provinces was suddenly added to their difficulties the best response that the military establishment could make to this new emergency would have been pitifully inadequate if put to the test.¹

Twenty years later it did not appear that much had changed. In November 1880 General Sir Patrick MacDougall, Commander-in-Chief in Canada, addressed the subject of 'Army Reform' in *Blackwood's Magazine*. He made the tone of his commentary clear by quoting from William Napier's *History of the Peninsular War*.

Why were men thus sent to slaughter when the application of a just science would have rendered the operation comparatively easy? Because the English ministers, so ready to plunge into war, were quite ignorant of its exigencies, because the English people were warlike without being military, and under pretence of maintaining a liberty they do not possess, oppose in peace all useful martial establishments.²

He built on these words of his father-in-law's to attack the government of the day with a ferocity which, considering the post which he held, the cloak of anonymity could only barely justify. The administration, he said, would never use the politicians who knew anything about the army; '.... to employ them on the work was too obvious a measure for the system of "how not to do it" ... Mr. Childers, disqualified for the Admiralty by his knowledge of naval matters, undertook to regenerate the Army.'³

In more measured terms, he gave his verdict on the current position of the army.

The new Secretary of State for War has announced the intention of dealing with the various army questions still unsettled. As regards organisation, what has been called Lord Cardwell's scheme has so far proved a failure, not through any inherent defects, but from the attempt

¹ See references to documents in the Harpton Court Papers, footnote 18, Ch. 3.

² MacDougall, 'Army Reform', *Blackwood's*, vol.128, Nov. 1880, 554.

³ Ibid, 553.

of the Government of the day to carry on wars without asking Parliament for the sinews of war. The Government has for the last three years been playing this game of false economy, and our military organisation has in consequence been subjected to a strain which it never was intended to bear, and, under which it was inevitable that it would break down.⁴

In fact, the organisation had not quite broken down. The country was just recovering from another panic (of a new war with Russia), and the army was engaged in serious fighting on the colonial frontiers in South Africa and Afghanistan, but, when, shortly thereafter, there was a sudden call to mount a major expedition to fight a war in Egypt, the army's response was robust. Six weeks after the decision to intervene Wolseley was at Alexandria in command of a well-found force of 30,000 men, and within a further month he had brought the campaign to a triumphant conclusion.⁵ On the face of it this demonstrated a commendable improvement in the ability of the army to meet the obligations imposed on it, but the military establishment were well aware that, if the machine was still running, it was creaking dangerously. But was MacDougall justified in laying the blame for this state of affairs so squarely on the shoulders of Government? This must now be examined.

The level of interest

The image of a Victorian army of lions led by donkeys persists, despite the detailed work of a generation of serious historians. It is easy to see why this should be. It is helpful to political theorists and other practitioners of the social sciences, who wish to explain the origins of the socio-political phenomena which concern them, if they can trace these back to neat historical models. When the issues relate to class or social status the necessarily hierarchical structure of an army is especially attractive, particularly if the object is to demonstrate the deadening impact of a complacent ruling class. Alex

⁴ Ibid.

⁵ Nothing could be drier than the official history, Maurice, JF, *The Campaign of 1882 in Egypt* (originally published in London, 1887; facsimile edition reprinted by The London Stamp Exchange Ltd., no date), but its laconic account of the logistics of the expedition makes encouraging, if dull, reading.

Danchev, Gwyn Harries-Jenkins and AW Preston have already been referred to in this connection, and Brian Bond quotes another illustration of the appeal of the technique. ‘The notion that an officer should be a professional soldier, qualified by technical as well as by the traditional virtues of a gentleman, was derided and looked down upon, except in the engineers and artillery, two corps which were only rather doubtfully fit for a gentleman to serve in.’⁶ This is not a totally exaggerated view. There were indeed large numbers of officers who lacked any interest in mastering their profession at anything other than a basic level, just as there were in the armies of other countries, and there were regiments in which the public display of interest in learning the military trade would have led to derision and worse. This was only part of the picture, however. There were also many dedicated soldiers, driven by ambition, pride or sense of duty to seek to improve their service and themselves, and opportunities for them to put their ideas forward; something which the words of the many serving officers, quoted or referred to directly in previous chapters, surely illustrate.

A significant number of those who contributed by translating foreign military works were junior officers at the beginning of their careers. This must have met with the approbation, at the very least, of their seniors. When, for instance, the eighteen-year-old Grierson, still at Woolwich, translated Todleben from the Russian this clearly had the active support of his mentors; and Lieutenant Baring’s version of the Prussian Field Regulations was circulated with the *imprimatur* of the War Office. Further examples of this kind of activity which have been mentioned in the course of this study must support two positive contentions about the cast of mind of many of the military establishment — a willingness to encourage bright young officers to develop their skills, and a genuine desire to stimulate thinking about developments in the practice of their profession throughout the army. The fervour of the lectures and debates, even though constrained by the dignified conventions of Victorian etiquette, is further evidence of this continuing enthusiasm.

⁶ Cited by Bond, *The Victorian Army*, 26, quoting Reader, WJ, *Professional Men: The Rise of the Professional Classes in Nineteenth-Century England* (London, 1966), 74. This may well be the origin of Dr Farrell’s judgment, referred to on page 25.

If the existence of this interest is accepted, the only surprise is to see how much of the debate was taken up with events on the continent. Most ambitious British soldiers knew that, if they wanted direct experience of fighting, they must look to India or the colonies, and from time to time the relevance of European developments was questioned for that very reason; as, for instance, when Charles Chesney was weighing up the merits of rifled artillery or Havelock-Allan campaigning for mounted riflemen. In general, however, Lonsdale Hale's assessment of the irrelevance of colonial experience seems to have been accepted, and '.... at the broadest level every thinking and literate soldier in the late Victorian army was European in outlook'.⁷

Assessing the influences

It was when they were talking as soldiers to soldiers that the Brackenburys, Chesneys, Hamleys and Hoziers were at their strongest and most persuasive, for the obvious reason that they could take a basic understanding of the context and the jargon for granted, and concentrate on the details of professional argument. This was where the specialist military journals (in particular, *The Journal of the Royal United Service Institution*, *The Proceedings of the Royal Artillery Institution* and *The Professional Papers of the Royal Engineers*) came into their own, as the means by which soldiers throughout the world could be kept in touch with the developments as well as the concerns which were exercising military thinking. These journals, as has been seen throughout this study, were vitally important in putting on record the debates and discussions which served to polarise such thinking, and there will be more to say about the impact which this had on change.

First, however, reference needs to be made to the extent to which personal contacts with foreign soldiers, and between colleagues at home, influenced the way that the army developed.

⁷ Strachan, *The British General Staff*, 79.

The most direct form of contact between the British establishment and the armies of important foreign powers was through military attachés. The degree of intimacy which they were able to achieve with their hosts did vary from time to time, but in general their personal status was notably more privileged than is the case today. Some, like Claremont, had the advantage at home of ‘friends at court’ in the most literal sense; others, like Beauchamp Walker, developed close bonds of personal friendship with the monarchs and princes who headed the armies of the continental powers; all were expected to report directly to the Commander-in-Chief and the Secretary of State whenever they were in London. Even towards the end of the century, when international suspicions had raised new barriers to the free exchange of military information, gifted soldiers like Grierson were able to establish a degree of intimacy and confidence with their foreign colleagues which largely penetrated these barriers. When Claremont, on leave, dined with the Queen, or Walker was able to tell the Commander-in-Chief what the Crown Prince of Prussia had said over breakfast about the quality of the army which he commanded, the impact was immediate. The direct interest taken by the Cabinet in such reports, referred to more than once in these pages, may perhaps be confirmed from one of Gladstone’s notes to Granville at the height of the Franco-German War; ‘I am struck by Col. Fielding’s account of the operations on the Loire. I do not mean as to its Frenchness which is very natural, but as to its (apparent) soldierlike capacity’.⁸

Similarly, the reports of the officers who were sent regularly to investigate specific aspects of the organisation and methods of foreign armies were based on a degree of shared confidence which, today, would not often be found in the intercourse of even the closest Nato allies. The results of this are clear to see in the information regularly assessed in the Quarterly Reports of the Ordnance Select Committee, as well as in the volumes of evidence examined by each of the many Royal and Parliamentary Commissions of the era.

⁸ Gladstone to Granville, D. 12. 70. Ramm, 184. Colonel WHA Fielding was additional military attaché at Paris.

The impact of private personal contacts is more difficult to assess. It seems clear that when young officers, men like Wolseley or Grierson, took the opportunity to travel privately to the scenes of foreign conflict, what they saw profoundly influenced their approach to military matters over a life time. This is scarcely surprising, in the case of lively-minded, ambitious soldiers such as these, but there are examples of even the most pedestrian of their colleagues taking every chance to look at what foreign soldiers were doing. Typical of these was General Ainslie, who rose to the rank of full general without ever taking part in a campaign. His memoirs reveal him as a self-indulgent *flâneur*, who regarded the army simply as a suitable environment within which to enjoy the comforts of gentlemanly society; yet those same memoirs are full of references to the occasions which he seized upon for visiting European military establishments and manoeuvres, a habit which was made the easier because of his family connections in Europe. There are several references to his sending accounts of what he had seen to the Horse Guards, even one to his having written a new system of cavalry drill, based on what he had seen of the practice of the French Cuirassiers at Lunéville, but in general he confined himself to describing details of the soldiers' appearance, and, in the case of the French army, patronising comments about the deficiencies of their horsemanship.⁹ The shallowness of such observations contrasts with the sharply-focused commentaries of the military attachés, and explains why, as Ainslie continued to grumble throughout his memoirs, his opinions were disregarded by those in authority.

Ainslie and his ilk were part of a small society (some of the ramifications of which are illustrated in appendix A3), and the experiences which they shared no doubt helped to maintain a conservative cast of mind within much of that body, but against this must be set the great volume of books and military tracts which pointed the way towards change. References to these have been made throughout the chapters dealing with specific issues, and Colonel Clive's opinion of their importance was quoted on page 57. The rapidity with which the foreign works were made available in translation to British soldiers, and the many references to them in articles and debates (even in distant Calcutta), attest to

⁹ de Ainslie, General, *Life as I Have Found It* (Edinburgh, Blackwood, 1883), 78-79, 139, 141-2, 160-1, 166-7, 187, 219, 240, 254-5, 309, 361, 389, 435-8.

their significance. Many of the articles, indeed, take a list of recent books as their starting point, and the backing pages of many of the commercially published works show the wide range of texts in print. As an example, illustration 7 reproduces the advertisements inside the front cover of Clery's *Minor Tactics* of 1875.

The *RUSI Journal* contained regular lists and digests of the significant titles as they appeared, and the occasional injunction to officers to devote more time to keeping abreast of what was happening in the wider world. For example, in 1879 Hale had this to say about the French '*Revue militaire de l'Etranger*'.

The knowledge of the existence of this publication is confined to so few Officers in the English Service, that it is desirable to give to a notice of it the most prominent position in this portion of the Journal.

It is not too much to say, that anyone who steadily digests this weekly budget of foreign military information will be kept perfectly *au courant* to everything of importance which is taking place in the countries with which it deals.¹⁰

The *Proceedings of the Royal Artillery Institution* recorded in detail all the publications which they received, and frequently included translations of relevant foreign works. The Royal Engineers Institute came into being some years later than the RAI, but the School at Chatham provides an illustration of the effectiveness of the way that authority and enthusiastic individuals could work together in Victorian Britain to promote good ideas. In 1874 Colonel Wilbraham Lennox, RE, launched a series of translations of foreign works for the edification of his brother officers, and although this was a privately funded initiative, it had the explicit support of the Commandant of the School of Military Engineering. Illustration 8 reproduces his Preface to the series (revised for no.3, issued in 1875) and it is interesting to see, not only details of what it cost to publish such works, but also that sales of the first two issues, '....limited to officers of our own Corps', amounted to 174 and 162 copies respectively in the first year. Shortly thereafter the RE Institute was able to take over the work begun by Colonel Lennox, and the extract from their *Professional Papers* for 1878, recorded on page 67, shows the range of the material which they disseminated.

¹⁰ Hale, Lonsdale, *JRUSI*, vol.23, 1879, 675-6.

All this suggests that those soldiers who were interested in studying their profession enjoyed ready access to what was best, or at least most up-to-date, in current military writing — but did the bulk of the army take advantage of this? Maurice was bitterly convinced that they did not. ‘Alas! It was one thing that books should be written; it was another that they should be read. The whole instinct of the mass of soldiers is against reading of any kind.’¹¹ Maurice’s patron Wolseley said much the same. ‘To study his profession, to become a master of his trade was the rôle of a very small knot of officers at that epoch.’¹² But Wolseley, part of whose own mastery of advocacy lay in creating one impression at one time for one audience and something completely different at another, had, thirty-two years earlier, at the very epoch which he was now describing, spoken warmly of ‘ a profession possessing numbers of most able men, highly instructed in all that pertains to their calling’.¹³

What conclusion can be drawn from these comments? It is no surprise that the great majority of regimental officers were not interested in reading books about their profession, but the size and breadth of interest of the minority may be, and there are one or two pointers in that direction. The shelves of the Institute of Historical Research have benefited from gifts of books and pamphlets from the private collections of several soldiers of this period, and one such was John Hozier — an officer of obvious talent, but who never achieved either the fame or the notoriety of his brother Henry.¹⁴ A list of some of Hozier’s collection is given in a separate section in the attached bibliography, and it implies an impressive range of linguistic skills to add to the evidence of professional zeal. The sales figures for Lennox’s publications are a second pointer. The Army List for 1875 shows 873 officers in the Royal Engineers (including distinguished Colonels

¹¹ Maurice, ‘The War Office and the Army’, *Quarterly Review*, vol. 183, Jan. 1896, 192-3.

¹² Wolseley, *The Story of a Soldier’s Life*, vol.2, 233.

¹³ Wolseley, ‘our military requirements, 526.

¹⁴ John Hozier, commissioned in the Royal Scots Greys, was a graduate of the Staff College — like his brother he passed out first of his class — and retired as a Lieut.-Colonel in 1880.

Commandant), many of them serving in remote parts of the empire. The fact that some twenty per cent responded to Lennox's initiative as soon as the works appeared says much about their approach to their calling.

Previous chapters have drawn heavily on the records of lectures and debates held at RUSI, at Woolwich, Chatham and Aldershot, and from as far away as Calcutta, and it is important to stress that these were not the structured components of a course at the Academy or the Staff College, but the voluntary assemblies of busy men who shared a common interest. The calibre of the presenters, the eminence of the Chairmen, and the vigour of the discussions all attest to the value which was accorded them at the time. This was the forum in which the most senior members of the military establishment were exposed to the arguments of all levels of their professional colleagues and influential civilians. It is the contention here that the interplay between middle-ranking soldiers like the Brackenburys and the Chesneys on one hand, and these senior officers on the other, created the climate in which the issues of the day could be teased into practical shape. At all events, it is difficult to believe that anyone reading the records of these events in detail can maintain that the establishment in general, and the Duke of Cambridge in particular, were insensitive to the issues which were addressed.

To emphasise this point it is now necessary to look again at the topic which has been running throughout this study as a sort of sub plot — the attitude of the establishment to officers of the Royal Artillery and Royal Engineers. The importance of this arises from the disproportionate number of officers from these corps whose arguments have contributed to this study. This is not intended to denigrate the contribution of men from other branches of the service, but to show that the judgment expressed by Gerard DeGroot, quoted on page 34, is not supported by the evidence.

Towards the end of his massive and magisterial *History of the British Army* Sir John Fortescue gives 'a sketch of the new army, 1870-1914'. In this, speaking of officers of the artillery and engineers, he says that few reached General's rank because regimental promotion was so slow, and '.... practically none were ever to be found on the Staff of

the army'.¹⁵ This is not simply mistaken; it is seriously misleading, because such a statement from so authoritative a source will generally be accepted without question, not least by those whose concern with the period is to emphasise the caste-bound nature of Victorian society. The evidence available from the careers of the officers of the time flatly contradicts Fortescue.

To take the question of promotion to general officer's rank first, this study's base group of officers has shown that regimental promotion within the artillery and engineers was in fact broadly comparable with that of the other arms. Ninety-seven of this base group eventually became general officers, and of these forty-one were gunners or sappers, including six of the seventeen Field Marshals, eleven of the thirty-eight Generals, nine of the eighteen Lieutenant-Generals and fifteen of the twenty-four Major-Generals. The Field Marshals included leaders of the calibre of Roberts, Kitchener and Nicholson, the Generals included John Adye, Robert Biddulph, Henry Brackenbury and Charles Warren, the Lieutenant-Generals James Grierson and the Major-Generals 'Chinese' Gordon.

The evidence relating to the Staff is similar. Within the War Office, it is only necessary to go down the alphabet as far as Sir Charles Callwell to find the names of John Adye, John Ardagh, Robert Biddulph and the Brackenburys — all major contributors to the development of the Intelligence Department, and eventually a General Staff. For the army in the field, the list of Wolseley's Staff for the Expeditionary Force in Egypt in 1882 contains forty-eight names, and of these eighteen come from the two corps, ranging from Chief of the Staff and Second in Command, Sir John Adye, down to three of Wolseley's four ADCs.¹⁶

The constitution of the many committees and commissions which continued to explore matters of defence during the decades following 1880 tells the same story. Henry Brackenbury was the only military member on the Hartington Commission of 1890 (and

¹⁵ Vol. 13 (London, Macmillan, 1930), ch. LX, 550.

¹⁶ Maurice, *The Campaign of 1882 in Egypt*, 112. Maurice served as one of the DAAQMGs.

the Secretary was Major GS Clarke, RE). Similarly, when St John Brodrick's 1898 Committee to consider the Decentralisation of War Office Business, with Brackenbury as a member, called its witnesses, the first five — called because of the importance of their positions — had all been commissioned in the artillery or the engineers; General Sir R Harrison (Quartermaster-General), Field Marshal Lord Roberts (Commander-in-Chief in Ireland); Major-General JF Maurice (General Officer Commanding Woolwich District); General HRH the Duke of Connaught (General Officer Commanding at Aldershot); and Brevet Lieutenant-Colonel JM Grierson (Military Attaché at Berlin). Significantly, Grierson had been called to advise the committee about '.... the system under which the German War Department carries on its work, and how the money is spent'.¹⁷

This is evidence that cleverness and technical-mindedness, associated with a desire to learn from continental experience, were not the bars to advancement that DeGroot and Sydenham's biographer have maintained; that, on the contrary, such qualities were encouraged, and frequently led to positions of influence. The chapters in this study looking at the specific issues have shown that senior officers throughout the period of the continental wars, men like Airey, Burgoyne, Lintorn Simmons and Wolseley, took care to exploit the talents of the bright officers, the Brackenburys and the Chesneys, Jervois, HA Smyth, Grierson, with just this object in mind. When Colonel Robert Home died at the early age of forty-one, his obituary in *the Times* was lavish in its praise of one '.... whose real worth was known to a comparatively limited circle; but that circle comprised most of those to whose hands the destinies of the Empire have been intrusted during the last two Administrations'. It particularly noted Wolseley's wisdom in spotting his early promise,

.... and it must ever redound to the credit of the present Adjutant-General of the Army (Sir Charles Ellice) that he recognised the ability of the young soldier and selected him as the chief working agent to carry out the various projects which were at that time on foot for the complete organization of our Army,¹⁸

¹⁷ PP 1898, C 8934, vol.VIII.

¹⁸ *The Times*, 31 Jan.1879, 2.

Technical matters and developments in the science of warfare were examined in chapter three, and the detail there demonstrates that the leadership was not only keenly interested in what was happening elsewhere but careful in promoting a close connection with the people and organisations best fitted to make the necessary advances in British equipment. Similarly, the chapters on organisation and structure contradict any suggestion that these details of the continental wars were not anxiously looked at and exhaustively debated. So far as the leadership was concerned, it is equally clear that throughout the period of the wars the generals most directly concerned, men like Burgoyne, Airey, MacDougall, Simmons, Lysons, Ellice and Wolseley, were committed to using the information so gained in order to raise the efficiency of their service. If they never found a solution to the fundamental problem of recruiting the necessary numbers to match the body of trained manpower available to the continental armies, it was not for want of anxious debate.

This thesis has included contributions from the Commander-in-Chief on most of the issues under consideration, and his character and influence deserve to be reappraised. Dr Farrell took him as the subject of his thesis in 1999, but his concentration on the relationship between Cambridge and his Royal cousin led him to endorse the view that the duke's tenure of office was an unmitigated disaster for the army. It is time for a more balanced judgment. There is no doubt that Cambridge remained in his post too long, but neither his determination to maintain the direct personal relationship between the Queen and her army nor his reluctance to upset the conservative element among the officers — and certainly not the interest which he shared with King Wilhelm of Prussia in the details of regimental uniforms and turnout — should be allowed to detract from his positive achievements during these early years in command; in particular his concern to keep abreast of what was happening on the continent, and the implications for the British army.

The reaction of the army to the necessary changes in infantry tactics was interesting. The debates recorded in chapter five show the high degree of acceptance of the main implications of the increased range and killing power of weapons, but they also

demonstrate the difficulties confronting those preaching the new doctrine, in the face of the long-established British regimental tradition. In some respects, as over the question of company size, there were good practical reasons for resisting change; but the determined unwillingness of so many regimental officers to accept that, in warfare between sophisticated opponents, once battle was joined they could not maintain control over their scattered troops, seriously inhibited the development of initiative at the tactical level in the infantry. The thinkers won the theoretical argument, but could not change the practice, and this illustrates one of the main reasons why the British army continued to differ so markedly from its late nineteenth century contemporaries — the lack of a mechanism for ensuring that once good practice was identified it would be accepted and applied throughout the army.

The reasons for this were examined in the chapter on application in the field, and they fall into two categories. The nature of British society, and its peculiar form of popular government, created the first group of reasons. Society was indeed commercial rather than military in structure. The reasons for maintaining a large navy were accepted readily enough by a nation of traders, but the expense, and even the presence, of a large number of soldiers at home was a constant source of irritation — except on the rare occasions when an invasion panic momentarily raised the army's profile. Hence the stultifying influence of the dreaded Estimates and ‘....the need to curry favour with the government by saving money’;¹⁹ the continuing pressure to economise, and to make doubly sure that soldiers were not being allowed to indulge their propensity for extravagance. The result was an army compelled to concentrate most of its resources on its first priority, the defence of the empire and its trade routes, at the expense of the creation of a coherent structure for the home-based force.

The second group of reasons, the specifically military reasons, arose from that constraint. None of these, on its own, is sufficient to account for the fact that it proved so difficult to create a commonality of doctrine or practice; but, cumulatively and collectively, they did.

¹⁹ Comments of Charles Brackenbury, quoted on page 160, and General Hills-Johnes, Appendix B2.

The structure of continental armies was designed to enable them to fight against their neighbours, and events had proved that the German army was the most efficient model. Reformers in Britain were pressing throughout the period for the country to adopt a similarly thorough-going district-based system, and Cardwell did his best to achieve this in the early 1870s, but, as his memorandum (quoted on page 163) spelt out, the totally different operational requirements of the British army made it appear impossible to organise all the units into self-sufficient Corps, trained and ready to take the field together. This lack of a permanent structure, and above all the dearth of opportunities for troops to train together in large numbers for the realities of war, meant that there was no mechanism for standardising whatever was best and creating the unity of purpose which made the German army so formidable.

The structure was not there. Nor was the essential central driving force, such as could have been provided by a powerful General Staff. As the Prussian/German army continued to triumph thoughtful observers, epitomised by the Brackenbury brothers, increasingly emphasised how much ‘the brain of an army’ contributed to its success. The trouble was that senior officers took so long to understand the underlying concept. Cambridge continued to fear that the creation of a post of Chief of the General Staff would fatally diminish his authority, and it is instructive to see how Wolseley, the great reformer, came round to the same point of view when he was given his opportunity to succeed Cambridge. This encouraged ministers to continue to advance the views expressed by Campbell-Bannerman, quoted on page 164, that because the potential problems facing the army of an imperial power were so varied and unpredictable the only practical solution was to wait on the event and then let the commander on the ground or of the expeditionary force, as the case might be, set his hastily assembled staff to solve the problems of the moment. This inevitably perpetuated the British view of staff work as a support service to provide a field commander with people to take care of the necessary logistical and administrative matters — the business reserved in the German army for the *Neben Etat*, and deliberately kept separate from the General Staff.²⁰

²⁰ Referred to approvingly by Haldane in his *Autobiography*, 206, as the *Intendantur*.

It also explains why education for leadership was neither consistent nor relevant throughout the army, scattered as it continued to be in small garrisons in so many different parts of the globe. Good principles were taught at Woolwich, Sandhurst and the Staff College during the 1860s and 1870s, but much of the detail was arid and, worse, susceptible to rapid acquisition by cramming, and so just as quickly forgotten.²¹ This could not be an adequate groundwork for coherent leadership of a force which continued to be a collection of regiments and brigades rather than an army. The restriction of the Staff to an administrative and intelligence-providing rôle, rather than making them central to the creation and direction of policy, meant that there was no controlling body to ensure that the army at home should share a common doctrine. It was not so much that the appropriate principles were not taught; what was missing was a means of ensuring that the lessons were actually being applied at the operational level. It was in fact a sad paradox that the richest country in the world double- and triple-checked the money spent on the army's support, but had no similar means for monitoring its professional progress.

To assess the consequences of this lack of rigour in ensuring that the professional competence of all officers was developed coherently it is necessary to move on another twenty years. In the aftermath of the Boer War, a committee was appointed to consider the Education and Training of the Officers of the Army.²² This committee divided its report into three parts, the antecedent education of Army candidates, the intermediate education of the same, and the military training of the young officer. On the first part they found that '(t)he general trend of the evidence, in short, is to indicate that the early education of the young officer has not, hitherto, been conducted on proper lines'.²³ They

²¹ Professor Bond, in *The Victorian Army and the Staff College*, ch. 3, gives a detailed account of this aspect of the teaching at the Staff College in the 1860s and 1870s. As against this, Dr Duncan Anderson, Head of the War Studies Department at Sandhurst, drew the attention of the present writer to the higher standard of attainment in modern languages and mathematics required of the cadets of that period compared with those of today.

²² PP 1902, vol. X. Cd 982. The Chairman was a member of the Cabinet, the Right Hon. Areta Akers-Douglas, MP, and the membership heavily academic, including the distinguished scientist Sir Michael Foster, who represented London University in Parliament, and the Heads of Eton and St Paul's. One of the two army representatives had to leave before their work was completed to become Governor of Sandhurst, no doubt, in the light of the criticisms, to the great benefit of that institution.

²³ Ibid, para. 9.

therefore recommended that the entrance examinations for Sandhurst and Woolwich should be made more practical and that the examination for aspirants for a Regular commission from the Militia should be wholly devoted to military subjects.

The second part concentrated on the instruction offered to gentlemen cadets. On the whole Woolwich met with their approval, though they recommended that more emphasis should be given to Tactics and Military History. Sandhurst, in contrast, was heavily criticised; the cadets spent too much time indoors and were not properly supervised; the instructors were not sufficiently dedicated or conscientious (‘ an instructional appointment is regarded in the Army generally as a shelf on which an officer may spend a few years comfortably ’); and allowing the cadets to be drilled by NCOs set them a bad example. There should be more instruction in Tactics, more exposure to practical work in the open, and more pressure on the young gentlemen to learn their business.²⁴

The committee’s heaviest criticisms, however, were reserved for the third part, the military training of the young officer. They were particularly scornful of the ‘futility’ of the promotion examinations, in terms of their irrelevant content and careless application.²⁵ Their denunciation, not only of the lack of knowledge displayed by young officers, but also of their lack of willingness to work or learn, was noted on page twelve of this study. The report said that this opinion was based on the evidence of the many commanding officers who had replied to their written questionnaire. There are always questions of subjective judgment in the analysing of such replies, and a case can be made that the selection of evidence, as quoted in Appendix II of the report, does not quite bear out their conclusion. What the majority of the replies seem to be saying is ‘Yes, there is little inducement for a young officer to be keen, because he sees that his barely competent colleague will gain promotion just as quickly’. This is *not* the same as saying that young officers were *in fact* idle. Nevertheless, it is a serious indictment of a system still reflecting the philosophy of the Penzance Commission of 1876; ‘Practically, then, the

²⁴ Ibid, para. 73-112.

²⁵ Ibid, para. 134-153.

present system, which we do not propose to alter, comes to this, that promotion is, as a rule, governed by seniority, tempered by rejection'.²⁶

The Akers-Douglas Committee's exposure of the haphazard nature of the training for leadership does raise questions about this aspect of the army's professionalism. The seriousness of the danger was concealed during the 1880s and 1890s. By and large the qualities required to fight small-scale wars against unsophisticated opponents were well practiced, and many young regimental officers quickly learned the practicalities of leadership at that level. The Boer War exposed the inadequacies of such experience when confronted by determined enemies armed with modern weapons, and it took many months before the leadership began to master the formations and tactics required for success in this unfamiliar environment. This was the fundamental lesson which the army had to learn from that campaign; that there must be a central directing body to coordinate all the forces of the empire, and a system of training throughout the army which would equip it to meet a sophisticated enemy on equal terms.

The inadequacy of this aspect of the army's structure says a great deal about the fundamental problems which had been exercising the minds of the military establishment throughout the preceding century. The Akers-Douglas report was clear about the immediate issue. 'The desire for economy appears hitherto to have been the deciding factor in this and other measures connected with Military Education'²⁷ This was precisely what MacDougall had been complaining about in 1880 — economy coupled with denial of the reality of the consequences — which had made it so difficult for the soldiers who saw the need for change to achieve their purpose.

The shock of the Boer War did create a more receptive climate. In March 1906 Haldane, newly installed as Secretary for War (and with the acquiescence of his leader, the same Campbell-Bannerman whose hostility to the idea of a General Staff had been so influential in 1890), delivered some much-quoted words to the House of Commons. 'A

²⁶ PP1876, XV, C1569, xxxiii.

²⁷ PP1902, X, 6.

new school of officers has arisen since the South African War, a thinking school of officers who desire to see the full efficiency which comes from new organization and no surplus energy running to waste.’²⁸ But the officers of whom he spoke had not sprung from the earth fully armed like the dragon’s teeth of Cadmus. The youngest of them, Spencer Ewart, Gerald Ellison and Douglas Haig, had been in the army for twenty-five years, while their seniors — those who would actually implement Haldane’s reorganisation — were commissioned in the 1860s.²⁹

This illustrates the crucial point that the evolution of the army’s structure was, as Strachan stressed with reference to the early years, a continuing process throughout the nineteenth century. The army was not simply forced out of its complacency by a sudden exposure of its failings in 1899. This study has focused on the depth of concern of the opinion-formers within the leadership to the need to react to the lessons of the continental wars, at every level, and the Boer War should be seen as a catalyst as much as a generator of the decisive changes which followed.

Haldane, addressing the Colonial Defence Conference in April 1907, reminded those present of the conclusions reached by the Esher Committee of 1904 in words demonstrating that two lessons which soldiers like the Brackenburys had been preaching since the 1870s had finally made their mark. He said that the South African War had shown that ‘we’ (it must be hoped that this meant we ministers) had never fully apprehended the importance of the maxim that all preparation in time of peace must be preparation for war; ‘.... it is the only justification for the maintenance of armies’, to which he added that ‘.... Count Moltke was able to organise victory for the Prussian and German armies in 1866, and again in 1870, because he and the general staff working

²⁸ Parl. Deb., 4th Series, vol. 153, (8 March 1906), col.664. Cited by Spiers, Edward M, *Haldane: An Army Reformer*, (Edinburgh University Press, 1980), 56.

²⁹ The Adjutant-General, Sir Charles Douglas, was commissioned in 1869, the Quartermaster-General, Sir William Nicholson in 1865, and the first Chief of the General Staff, Sir Neville Lyttelton, also in 1865. As a Major Lyttelton had been Childers’ Private Secretary in 1880.

under him were free to apply their minds wholly to war preparation'.³⁰

Two other lessons, that involvement in a continental war would require reserves of trained manpower far greater than could be generated by voluntary enlistment, and that the higher leadership could only learn how to manage such numbers by practice in peacetime, remained beyond the power of the army to correct. To condemn this as unprofessional would be unjust. It is the duty of a professional body to advise the employer of its services, vigorously, what the realities of their situation are, and it is the contention of this thesis that these particular issues were presented seriously during the period when the continental wars were creating a new international environment.

It is the second duty of professionals to do all that they can, given the prevailing conditions, to meet their employer's requirements. It was the Secretary for War, and not a soldier, who reiterated to the Colonial Defence Conference of 1902 the long-held view of successive administrations about the function of the British army; 'And I would point out that this is not a force kept for ambitious schemes or offensive operations or for an attempt to involve ourselves in the great quarrels of our neighbours in Europe'.³¹

³⁰ *Extracts from Proceedings of Colonial Conferences Relating to Defence* (London, Colonial Office, 1909), 189.

³¹ *Ibid*, St. John Brodrick, 78.

The normal method of entry to the Woolwich Military Academy in 1854 was by selection at an age between fourteen and sixteen, and the cadets so entered were categorised as OS entrants. They followed a training programme of either two or three years, depending on their progress, so obtaining their commissions at the age of seventeen or eighteen.¹

To meet the emergency requirements created by the Crimean War a series of special public examinations was held between 1854 and 1857 to recruit slightly older youths and get them into service more rapidly. Seven young officers were commissioned on 23 October 1854 as *temporary* second lieutenants RE, and the name heading the list is that of (later Lieut.-General Sir) Robert Grant, whose biographer in the DNB records that he did indeed pass first in a public examination for direct commissions into the engineers and artillery. Grant was then seventeen years and two months old. Five men were commissioned in the artillery that same day, the list headed by (later Colonel Sir) Vivian Majendie, aged eighteen, and it is reasonable to assume that they had been recruited in the same manner. All of them were promoted to First Lieutenant during December of the same year, the exact date depending on their position in the list, and it is interesting to see that their seniority in their corps continued to reflect this ranking for many years. For example, the engineers were all promoted to regimental Major on 5 July 1872, though both Grant and Arthur Macdonnell, who stood fourth in the original examination, had been given brevet rank previously, and their promotion to regimental Lieut.-Colonel followed between July 1878 and September 1879, still in the same order of seniority.

A larger batch, numbering nineteen, was recruited the same way the following year, and this time only the two who passed in at the head of the list, (Maj.-General Sir) Robert Murdoch Smith and (Maj.-General Sir) Charles Williams, were commissioned in the

¹ There was an issue about whether the length of their training, and therefore their age at commissioning, would prejudice their careers in competition with their contemporaries in other arms, and this was dealt with in the latter part of this period by dating their commissions six months before they passed out. See, for example, James Grierson (footnote, p 44).

Royal Engineers, on 24 September 1855. Their subsequent careers were of some interest, and are referred to in the main text of this study. Generally speaking, the remaining seventeen, who were commissioned the same day into the Royal Artillery, did not have notably distinguished careers, though perhaps (Colonel) Francis Duncan, who passed third after the two engineers, subsequently became commander of the artillery of the Egyptian army and later an MP, might be regarded as an exception.

Robert Murdoch Smith's biographer in the DNB says that Smith passed first of forty six candidates for this direct method of entry. It does appear from the army lists that a further sixteen were commissioned into the artillery by this method on 6 March 1856, all initially as 'temporary' First Lieutenants.

Meanwhile, other mechanisms were being employed to swell the ranks of the two corps with relatively mature, if only partly trained, young officers. The Royal Military Academy Cadets' Register records that thirty successful candidates were 'Appointed by direct Nomination to the Practical Class per Lieutenant General's letter of 3 March 1855 — without previous Examination and joined in the Royal Arsenal 6 March 1855'. These men, known as 'D' entrants, were on average eighteen years and two months old when they joined, and they were commissioned on 31 July 1855, after just less than five months at Woolwich, nine in the engineers, sixteen in the artillery, four (curiously) in the infantry — and one discharged.

A few months later the first of three batches of cadets was brought in by what was known as the 'C' entry. This group was entered in the Register as 'Appointed by direct nomination to the Practical Class per Lord Panmure's Authority of 30 August 1855 having passed their Examination at King's College and joined in the Royal Arsenal on the 5th September 1855'. Their average age was exactly eighteen. The Register states that 'these 29 gentlemen were all that qualified out of 105 who were examined', but a further two were added to the list. They were commissioned on 7 April 1856 after seven months' training, ten in the engineers and twenty in the artillery — with one falling by the wayside. It is notable that, as usual, those who headed the list opted for the engineers,

including three officers who subsequently made a significant contribution to the issues with which this study is concerned — Robert Home, Henry Brackenbury and Frederick Hime.

There were further ‘C’ entries in March 1856 and August 1857, but the period of training before commissioning was increasing, reflecting the passing of the immediate crisis. The 1856 entry were commissioned on 20 December, after eight months, and the 1857 entry, after between sixteen and twenty two months, on several dates between October 1858 and June 1859.

Officers commissioned directly into Artillery and Engineers

Royal Engineers **23 October 1854**

Robert Grant
Edward Harding Stewarth
Edward Donald Malcolm
Arthur Robert MacDonnell
James Hamilton Wilson
Charles Anne Law de Montmorency
Hon. William Le Poer Trench

24 September 1855

Robert Murdoch Smith
Charles William Wilson

Royal Artillery

Vivian Dering Majendie
Jas. Edward Blackwell
Sir J Wm. Campbell
Aemelius De Vic Tupper
John Chas. Fra. Ramsden

Francis Duncan
John Ryder Oliver
Edward Egan
James Corry Jones Lowry
James Peattie Morgan
George Grote Hannen
Philip M’Laurin Guille
Arthur Ford
Francis Montague Smith
Francis Arthur Mant
Frederick Howlett
Richard Handcock
Charles Mill Moloney
George Arbuthnot
Richard Sadleir
William Ruxton Barlow
Robert Calwell Smith

6 March 1856 All Royal Artillery

Alexander Doull

Robert Emmett Cane

Archibald Hamilton Bell

Francis Sadleir Stoney

George Budd

John Haughton

Henry Rogers Ievers

Robert Lloyd

James Colquhoun

Thomas Clarke

William Godeffroy Branc kert

Donald Roderick Cameron

William Henry Noble

George O'Conner

Richard Newton Young

Joseph Haythorn Edgar

Appendix A2

The German army and the cult of the offensive

Professor Brose's researches into German army doctrine in the last twenty years of the nineteenth century were referred to in chapter 5. His conclusions rather surprised the present writer, and prompted him to seek the views of the German Military History Research Department (*Militär-geschichtliches Forschungsamt*). This appendix consists of the enquiry letter and its response.

Garreg Lwyd
Rhayader
Powys
LD6 5LE

Thursday, 15 August 2002

TgbNr.: 01-0737

Dear Hauptmann Groh

May I trespass once more on your goodwill?

A professor of history at an American university recently had this to say about German army doctrine in the aftermath of the 1870-71 war. 'I found that feuding factions in the infantry, cavalry and artillery had fought over the tactical and technological lessons of the Wars of Unification (1866-1870). Those who emphasized the superiority of man and morale over machine and firepower prevailed by the late 1870s — to the army's detriment. Regulations and majority prejudices called for tight infantry formations and shock attack tactics, large-unit cavalry charges featuring waves of massed horsemen, and offensive field-artillery tactics that maximized mobility and valor while neglecting firepower and marksmanship.' (Brose, Eric Dorn, *The Kaiser's Army: The Politics of Military Technology in Germany during the Machine Age*. New York, Oxford University Press, 2001, p. 4)

He also says that the role of the artillery began to be played down because the officers of that arm were not so well-born as those of the cavalry and infantry, and the latter were determined to reassert the moral values of the feudal age. (Ch. 2) He then concludes that 'it was the French and (to a lesser extent) the Russians, not the Germans, who blazed the trail of modern military technology in the 1880s and 1890s'. p. 42.

Professor Brose has clearly studied the German military journals and the proceedings of the military societies of the period with great care, and there was certainly much debate about fighting doctrine, but it seems to me that Brose has exaggerated the extent to which the voices of reaction were actually prevailing, in the 1870s at least. During that decade the German writers who impressed the British military establishment were men like v. Boguslawski, Prince Kraft and of course May (whom Brose does not mention) and the writers of the official histories of the campaigns, who conveyed a message which was the exact opposite of what Brose was saying on his page 4, — and when the backlash came, in the '80s and '90s, the reaction was led more by French than German doctrine.

I have to admit that I am prejudiced against writers like Brose, who dwell so much on socio-political theory (the emphasis on social class attitudes, and the use of amateur psycho-analysis [of Kaiser Wilhelm II on p. 114, for instance]), and it is difficult to take seriously as a historian a man who says that 'Bazaine seized the initiative on 16 August against the German

Second Army of Friedrich Karl, attacking him at Mars-la-Tour' (p. 9) — but he has studied the period.

May I therefore ask if you could possibly answer the question; is there much evidence to support his argument about the rapid change of heart amongst the German military hierarchy during the 1870s?

May I further impose on you by asking whether you could tell me something about v. Boguslawski's career after the publication of the *Tactical Deductions*? Did he achieve high rank?

Once again, I shall be most grateful if you are able to help me at all with these questions.

With all good wishes

Yours sincerely

Anthony Hampshire

Militärgeschichtliches Forschungsamt
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27.08.02

gr

Anthony Hampshire
Garreg Lwyd
Rhayader
Powys
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USA

TgbNr.: 02-1244
(Please quote in correspondence)

Subject: Deutsche Militärdoktrin 1870/71
Reference: Your letter dated 15.08.02
Enclosures: - -

Dear Mr. Hampshire,

thank you for your inquiry to our institute.

An answer to your question has to mention several facts :

1. The German General Staff, even Moltke used the new technical inventions like railway and telegraph successfully. The victories in 1866 and 1870 are mainly caused by using technical auxiliaries efficiently.
2. The role of military leadership and the point you call "heart" are also relevant for military doctrine in Germany. Already Clausewitz mentioned the basic role of "esprit" and "genie" and the importance of man and moral.
3. It's true the officers of the German Army during the 1870s and 1880s used the new technical development, but their philosophy of the world was anachronistic. The new class of workers weren't paid attention to, the officers corps' experience was formed by an agricultural and feudal view of life.
4. So I believe Brose's statements are plausible, there are good arguments for his opinion. But there are also good arguments for an weekend version, and so your presumption that he has exaggerated his cognitions could be a solution of this problem.

At least some words to Boguslawski : His career was really successful. He became a Brigade Commander and retired as a Lieutenant General.

With kind regards
On Order


Groh, M.A.
Hauptmann

Appendix A3

Personal connections — the Biddulph circle

At a time when ‘cronyism’ in public life is attracting considerable adverse comment it may be salutary to be reminded how close-knit Victorian society was. Only a small proportion of the population was fitted by birth, education and connections (not to mention gender) to play an active part in the direction of affairs, and it was inevitable that the relationships between these privileged people should have been strong. Some of these family connections have been touched on in the body of this study, but it would require a full-scale research project to explore the significance which this could have had on creating common attitudes of mind to military matters. All that this appendix is intended to do is to illustrate, from one family’s circle of friends and relations, how far-reaching the connections could be.

The Biddulphs were a long-established and well-respected family in the marchlands between England and Wales, but their name would probably be unfamiliar to anyone who did not happen to be especially interested either in the local history of that part of the world or in the politico-military history of Victorian Britain. It is interesting, therefore, to see how closely they were connected by ties of blood and friendship with many of the people whose names appear in this study, and to speculate how far the ripples would reach if the exercise were continued one stage further — taking into account, for instance, the ramifications of the Wolseley ‘ring’ on one hand and the Royal Family on the other.¹

General Sir Robert Biddulph worked with **Cardwell** during the crucial years when the army reforms of the 1870s were being introduced. He is probably best known as the author of *Lord Cardwell at the War Office: A History of his Administration, 1868-1874* (London, Murray, 1904), but he was also a lifelong friend and colleague of **Wolseley’s**. Robert Biddulph’s brother was **Michael Biddulph**, banker, MP and later Baron Biddulph. Michael’s

¹ These particulars were accumulated from the following sources. The Morier Papers in Balliol College, Oxford; Ramm, Agatha, *Sir Robert Morier: Envoy and Ambassador in the Age of Imperialism 1876-1893* (Oxford, Clarendon Press, 1973); the Biddulph family records in Hereford Public Library; General Ainslie’s *Life*; the DNB; and the FO List for 1880.

wife was a daughter of **General Jonathan Peel**, Secretary for War and brother of a previous Prime Minister.

Another daughter of General Peel was the wife of **Sir Robert Morier**, the diplomatist, close friend of **the Crown Prince of Prussia** and his wife, daughter of **Queen Victoria**. Morier was a lifelong enemy of Bismarck, with many connections among liberal politicians in the German States. He was a founder member of the Cobden Club, whose members included **John Morley** and **Thomas Huxley**, and also of the Cosmopolitan Club, along with **Chichester Fortescue**, **Austen Henry Layard**, **Henry Reeve**, **Lord Odo Russell** and **George Goschen**.

General Sir Thomas Biddulph was first cousin, once removed, of Robert and Michael Biddulph. He was an important member of the **Royal Household**, successively Master of the Household and Keeper of the Privy Purse, having been originally appointed by **Baron Stockmar**, whose son was another intimate friend of Morier. Thomas Biddulph's wife was one of the Queen's personal entourage, as was the wife of **General Claremont**, who was a Groom of the Privy Chamber in addition to his professional duties as military attaché.

Thomas Biddulph's elder brother was another Robert, **Robert Myddleton Biddulph** of Chirk Castle, who was an old friend of **General de Ainslie**. The latter was a regimental colleague and friend of **General Sir Beauchamp Walker**, who, like Morier, could claim an intimate friendship with The Prussian Crown Prince and Princess. Ainslie recorded that when he was staying with Robert he enjoyed meeting their friend and neighbour **The Hon. George Wrottesley**, the son-in-law and biographer of **Field Marshal Sir John Burgoyne**.

General Sir Michael Anthony Shrapnel Biddulph was only distantly related, although the Morier Papers in the Balliol archives confuse him with the Michael mentioned earlier.

Appendix B1

Holders of offices relating to the army, Military Attachés and contributors to the Periodicals

Holders of offices relating to the army

Cabinets

	Prime Minister	Foreign Secretary	Secretary for War
Feb. 1858	Derby	Malmesbury	Gen. Peel
June 1859	Palmerston	Russell	S Herbert
July 1861			Sir George Lewis
April 1863			de Grey (Ripon)
Oct. 1865	Russell	Clarendon	
Feb. 1866			Hartington
June 1866	Derby	Stanley	Gen. Peel
Mar. 1867			Sir JS Pakington
Feb. 1868	Disraeli		
Dec. 1868	Gladstone	Clarendon	Cardwell
June 1870		Granville	
Feb. 1874	Disraeli	Derby	Gathorne Hardy
April 1878		Salisbury	FA Stanley
April 1880	Gladstone	Granville	Childers

War Office

	Parl. Under Sec.	Financial Sec.	Perm. Under Sec.
July 1861	de Grey		
Dec. 1868	Northbrook		
1871		JC Vivian	Lugard
1872		Campbell-Bannerman	Vivian
1873	Lansdowne		
Feb. 1874	Pembroke		
1875		FA Stanley	
1876	Cadogan		
April 1878		Loyd-Lindsay	
1879	Bury		RW Thompson
April 1880	Morley	Campbell-Bannerman	

Horse Guards

	Adjutant-General	QM general	Military Sec.	Intelligence Dept.
1858	Sir G Wetherall	Sir R Airey	Sir C Yorke	
1860	Sir J Scarlett		Gen. Forster	
1865	Lord W Paulet	Sir J Hope Grant		
1870	Sir R Airey	Sir FP Haines		
1871		Sir C Ellice	Gen. Egerton	
1873				PL MacDougall
1874			Sir J Lindsay	

1876
1880

Sir C Ellice

Sir D Lysons
Sir G Wolseley

Sir AH Horsford
A Alison

Sources. Woodward, *Age of Reform*, Ensor, *England 1870-1914*, Verner, *Cambridge*.

British Military Attachés in particular years.

Year	Berlin	Paris	Vienna	St. Petersburg
1864		Col. ES Claremont, CB		
1866	Col.CPB Walker, CB	Col. Claremont	Col. Hon. St. G Foley, CB	Lt.-Col. HH Crealock
1870	Col.Walker	Col. Claremont	Col. J Conolly	Col. Rob Blane, CB
1876	Maj-Gen. Walker	Col.Conolly	Maj.-Gen. CH Morris, CB	Capt. Hon. FA Wellesley
1880	Lt.-Col. Hon. PS Methuen	Maj.-Gen. Conolly	Lt.-Col. Hon EH Primrose	

Source. Army Lists.

The Literary PeriodicalsContributors on military matters

	Blackwood's	Cornhill	Edinburgh R.	Quarterly R.	Fortnightly R.	Fraser's	Nineteenth Cent.	St. Paul's	Westminster R.	Macmillan's
Politicians										
Robert Cecil				*						
Gladstone			*	*			*			
HHM Herbert				*						
Sidney Herbert									*	
John Holms							*			
GC Lewis			*							
John Morley					*					
S Walpole		*								
Soldiers										

	Blackwood's	Cornhill	Edinburgh R.	Quarterly R.	Fortnightly R.	Fraser's	Nineteenth Cent.	St. Paul's	Westminster R.	Macmillan's
J Adye (senior)	*		*	*			*			*
Alison	*									
H Brackenbury						*		*		
C Brackenbury						*	*			
Burgoyne		*							*	
C Chesney	*		*	*	*	*	*			*
GT Chesney	*				*					
Gleig	*			*		*				
Hale										*
EB Hamley	*						*			
Havelock-Allan	*				*		*			
Home		*		*						*
H Hozier										*
MacDougall	*			*						
Majendie		*								
B Walker										*
Wolseley	*						*			*
Others										
Dasent			*	*						*
Forbes		*					*	*		
Galton			*							
Reeve			*							
C Trevelyan								*		

Identifying Authors

Despite the convention of anonymity, scholars who need to refer to such works are usually able to identify the authors because of the admirable work of the compiler of *Wellesley's Index*. In addition to listing every article in accessible form, he has taken great pains to establish the identities of the authors, by consulting the private papers and account books of the magazines, and occasionally by the less certain method of using internal evidence (such as references to other articles where a positive identification can be made).

The present writer has therefore been happy to accept *Wellesley's* attributions in almost every case.

Very rarely does Homer nod. The exceptional case is an article in *Fraser's Magazine* for June, 1876; 'Remarks on modern warfare', written by a soldier and signed PSC. *Wellesley's* compiler attributes this piece to an otherwise unrecorded soldier named Percy Scudamore Cunningham, on the ground that he was the only officer with those initials in the 1876 Army List. It is perhaps more plausible to believe that in this particular case the author was asserting his professional credentials rather than signing his name.

Appendix B2

Extracts from letters and memoranda.

1. Russell to Delane, 9 July 1866

My dear Delane

I am glad to see from my heart that there is a sort of panic in England about the needle gun. Let there be no mistake about it. The needle gun has pricked the Austrian army to the heart. If we do not at once arm our troops with a breech-loader with fixed ammunition (no damned humbug about ‘capping’) we are howling idiots, and deserve to be smashed in our first fight. All that stuff and nonsense about ‘throwing away fire’, ‘reserve ammunition’ and the rest of it must be got rid of. Fixed ammunition with its own ignition must be the system, or we lose the greatest advantage of the breech-loader. Do press this on the authorities if they have the smallest doubt about it.

Now, as well as I can understand, Snider does not provide for self-igniting cartridges. If so, for God’s sake don’t let us waste 6d on him. The motions required for capping are the very greatest drawbacks to firing next to the ramrod ramming. Do be urgent, incessant, and remorseless about this. It is quite incredible how brave men are cowed by this damned weapon — cavalry and all. Nor could I, had I not seen, have believed in such tremendous volleys on their front. The needle gun trebled the line of Prussians — a line of skirmishers made a rolling fire like a regiment firing a *feu de joi*.

[Text from Atkins, JB, *The Life of Sir William Howard Russell*, 2vols. (London, John Morley, 1911), vol.2,140-1.]

2. Claremont to Lord Cowley (Ambassador at Paris), about the threat of a French invasion

25 June 1858. Castle Hill - Ealing

I saw General Peel yesterday and he is evidently very uneasy about France; everyone in fact seems so much alarmed that it is quite enough to shake the best rooted convictions and I sometimes ask myself whether after all I may not be mistaken, yet I feel I am not. Although the recruiting goes on merrily at the rate of 200 men a day, yet we have sent large stores of muskets and so forth to India, we have very little remaining; all military matters are also very confused and in a state of transition; I suspect the conscience of all this unsettles and disturbs men's minds. The completion of the railway to Cherbourg makes them also see everything en noir, but what answer can one make to Military men who tell one gravely that an army could be sent to the said Cherbourg and embarked there without our knowing anything about it.

I forget whether I told you that I had seen Mr Disraeli who seemed convinced by what I told him. I dine at the Palace on Monday and I hope the Queen will give me an opportunity of also telling her the plain truth. If they want to get up a cry for a special purpose they ought in fairness to let one into secret and then one would do one's best to chime in.

29 June 1858. London

Last night I dined at the Palace and had an opportunity of telling Her Majesty that there was no actual ground for all the alarm that has been felt here with regard to France. I assured her that all their doings were closely watched and that it was most unlikely that preparations on any scale should escape our notice; her answer was rather a clue to me of the apparent exaggeration of the whole thing, she begged me not to say too much about the want of preparation on the other side and not to let people feel too secure here; she laughed when I said I would take the hint, it is evident that it is done in a great measure to get up our own establishments.

8 July 1858.

I think the invasion panic is decidedly dying off but nevertheless govt. seem determined to put both our Navy and our Army on the best possible footing.

29 March 1859. Paris

I forgot to mention that Fleury said when talking of the military preparation; après tout il faut bien jouer la petite Comédie.

1 August 1859. Castle Hill – Ealing

I saw Lord John the day before yesterday and underwent a close examination. I had already passed through a similar ordeal the day previous carried on by Ld. Wodehouse and Hammonds. I do not think that Government seriously apprehend anything but all are of opinion that the Army and Navy are not as they should be and the only chance they have of getting money out of the country is by keeping up the cry. I pointed out the danger of not keeping this cry within bounds which they fully admit but it is not easy.

[PRO FO 519/168.]

3. Lieutenant-General Sir James Hills-Johnes. Comments written in the copy of Adye's *Memoirs* in the National Library of Wales.

Sir John Addie(sic) was looked upon by the Regiment as parsimonious and obstructive — whether from an obstinate opinion in favour of the muzzle loader or to curry favour with the government by saving money — he alone can tell — there is no doubt but that the superiority of the breech loader over the muzzle loader had been exposed on the continent that (sic) all the nations had armed themselves with it before sanction was given for the trial of these guns which led to their introduction into our army.

4. Memorandum by WFDJ (Colonel Jervois), War Office, 6 July 1864

Present administration of Lord Palmerston

In 1859, almost immediately after the commencement of Lord Palmerston's second Administration, a Royal Commission was appointed to consider the question of the defence of the Kingdom.

That Commission endorsed the measures that had already been taken for fortifying Portsmouth, Plymouth, Pembroke and Portland, and the Government upon the recommendation of the Commission adopted other measures of defence, in extension of what had been previously in progress, and for the fortification of other vital points.

These measures have been carried into effect, as far as they have already gone, with energy and success, and the whole of the works which have been approved by Parliament are in a fair way towards completion.

Probably at no other period have so many works of fortification been carried on by a Nation at one time, and with such an absence of failure.

Portsmouth, Plymouth, Portland, Pembroke, Dover and Cork, the Thames and the Medway, will, when all the works recommended by the Defence Commission are completed and armed be well nigh impregnable to any attack to which they are ever likely to be subjected. In addition to the above, the defences of the Harbour of Harwich and of the Humber have been added to; steps are being taken to fortify Newhaven and the defences of other vulnerable points on the Coast have been improved.

The result of the measures taken by the Government, both in respect of fortifications and in the encouragement of the Volunteer movement has been to allay the panics which used so often to take possession of the public mind.

As regards fortifications abroad — in addition to the improvements which have been effected at Gibraltar, Malta, the Mauritius and elsewhere the question of the defence of Canada has received the earnest attention of the Government.

An officer was specially sent out to report on the defence of Canada, and that difficult question is now placed in such a light that Government will be enabled to act.

The same officer was also directed to visit our Naval Stations in the Atlantic and steps have been commenced for improving the defence of those Stations.

Already new works have been undertaken at Halifax, and a commencement has been made in the improvement of the defences at Bermuda.

WFDJ

War Office, 6th. July 1864

The expenditure on fortification at home since the 1 st . April 1859	
has been about	£4,000,000
and the outlay on fortifications abroad	
has been (from the same date) about	<u>£250,000</u>
Total	<u>£4, 250,000</u>

About £1,250,000 of this sum has been voted by Parliament in the ordinary Estimates and £3,000,000 by Special Acts of Parliament which have empowered the Govt. to raise loans to the extent of £3,850,000.

WFDJ

[Broadlands Papers, University of Southampton. ND/A/45.]

5. General Charles Grey to Sir George Cornwall Lewis, 2 April 1862. Balmoral Castle

My dear Sir George

I write a line by the Queen's desire to express HM's hope that you will not be too easily turned from the completion of works which have been decided upon after mature consideration, without, at all events, convincing yourself that a change is imperiously commanded by a change of circumstances.

There was nothing that the Prince deprecated so strongly as constant changes of plan, which prevented the completion of any works, and bid fair to leave us as defenceless in the moment of danger.

It is possible that wooden ships may be quite superseded for future warfare; and that no forts, however heavily armed, may be able to impede the progress of iron vessels.

But this fact shd be proved beyond the possibility of doubt, & it shd be clear to demonstration, that the proposed forts at Spithead will not answer the purpose expected from them, before you consent to the suspension of the works.

Believe me

Yrs very truly

C Grey

[Harpton Court Papers, C/1325, National Library of Wales.]

6. Copy of a letter by Captain FitzGeorge to Henry Brackenbury, 25 July 1871, found inside a copy of FitzGeorge's book *Plan of the Battle of Sedan accompanied by a Short Memoir* (London, Edward Stanford, 1871).

My dear Brackenbury

I have not yet had my work because it is only offered to the trade today, but I need hardly tell you, that after your kindness to me at Metz, I should not have omitted to send you a copy; I have directed Stanford to send you 2 copies, so that you may forward one to the Maréchale, who I trust will accept it. I am afraid it will hardly repay her reading it, but it may serve as a memento of a friend and well-wisher. It is published rather late in the day, but the time taken up in binding and correcting the lithography has delayed its appearance, added to which it was written and drawn at a time when my hands were full of work.

Hoping to have your opinion of the little merit it may possess.

Believe me,

sincerely yrs.

G Fitzgeorge

7. MS copy of an extract from a letter by Colonel J Eardley Wilmot, RA, to Sir George Cornwall Lewis, 11 November 1861. Washington US

Photocopied on the three following pages.

[Harpton Court Papers, 2931, National Library of Wales]

Col Wilcox

recd from Washington

1831

HARPTON COURT

HARPTON COURT

liant from a private letter from
 Genl J. Eardley Wilmot - Royal
 illery Office Washington. U. S.

11 Nov^r 1867.

The energy of all in producing
 supplies of warlike material is
 freshing. It reminds me of what
 a European war did for our own
 sea and air affairs. Dalghren's 150
 Rifle Gun is a fine weapon. Cast
 iron. They have 6 varieties of Rifle
 common in the field and for ships,
 each State may, in addition to the
 national supply, bring its own for its
 own Volunteers - a bad system but
 necessary in such an emergency. I
 have seen nearly 200,000 men recruited
 re. most admirable forts - Guns &

Carriages Excellent. Hospital and
 Transport Wagons of the very best.
 The Army well fed, indifferently
 shod. Plenty of clothing and under
 clothing. The Cavalry - Gun - Artillery
 horses admirable. More than 100 guns
 well horsed. One of the Rifled 12 p^r of
 wrought iron most Excellent. A cast iron
 12 p^r having a wrought iron ring on
 the breech, not much liked. Breech
 loading looked on with indifference.
 They let me have some Quick shell
 and Shrapnel practice - very good -
 12 p^r Rifle Gun fired 3 times per
 minute easily and could do so.

1871 J. Gardley Wilmer.

Appendix B3

Strathnairn Committee Administration of the Transport and Supply Department of the Army

HC 1867, XV 343.

Conclusion. First report, 6 August 1866.

‘The Committee having satisfied themselves that the formation of a Department of Control, and the amalgamation of the Supply Departments of the Army, are urgently required; and also that the Head of such a Department should be responsible for, and direct, under the Secretary of State, in concurrence with the Commander-in-Chief, all duties connected with Supply and Transport. (Page V).

Reports on European Armies. Report, 23 March 1867.

Appendix 23. Report from Colonel Hope Crealock, dated Verona, 3 September 1866, about the Austrian army.

Appendix 24. Report by a Committee of Officers on the French Intendance, 1855. 27 pages.

Appendix 25. Report by Colonel Claremont, CB, on the *Intendance militaire* of the French army. 5 pages.

Appendix 26. Note obtained by Lieut.-General Sir Hope Grant, 13 September 1866, from the Minister of War at Paris. Sketch of the French Intendance, by Deputy Commissary-General de Fonblanque. 6 pages.

Appendix 27. More from Claremont.

Appendices 28/9. Report by General Codrington to Panmure on the French Intendance, from 20 January 1856. 17 pages.

Appendix 30. More from Claremont.

Appendices 31/2. Notes from Major-General Cadogan on the Italian Intendance, dated Padua, 1866.

Appendices 33/4. Extracts from reports on the Prussian army by Lieut.-Colonel E Reilly, RHA, dated Prague, 11 August 1866, and by Colonel Beauchamp Walker, CB, 15 November 1865. 6 pages.

Appendices 35/6. More from Walker. 3 pages, and a report on Field Railway Divisions in Prussia by v, Roon.

Appendix 37. More from Reilly, 19 October 1866.

Appendix 38. Postscript notes of the military correspondent of *The Times*. Prussian transport. 1 page.

Appendix 39. Report from Colonel Robert Blane, military attaché at St. Petersburg, 10 October 1866. 6 pages.

Appendix 40. More on Russia, from Russian Chief of Staff. 6 pages.

Appendix B4

Careers of Officers

Explanatory note

The attached spread sheet contains details of the careers of one hundred and twenty five British army Officers. Most field headings and abbreviations are self-explanatory, but the following notes may be helpful.

Father's status. MO = Military Officer. NO = Naval Officer.

Entry method. How the officer secured his commission.

- W signifies through Woolwich
- S Sandhurst
- A Addiscombe
- D Direct
- DX Special Direct
- M transfer from Militia

Corps. The body into which he was first commissioned.

- Cavalry. LG = Life Guards, DG = Dragoon Guards, L = Lancers, LD = Light Dragoons, H = Hussars.
- Artillery. RA = Royal Artillery, Bengal A = Bengal Artillery, G C'st Art = Gold Coast Artillery.
- Engineers. RE = Royal Engineers, Bengal E = Bengal Engineers.
- Foot Guards. GG = Grenadiers, CG = Coldstream, SFG = Scots Fusilier Guards.
- Infantry. RB = Rifle Brigade, R = Rifles, Ceylon R = Ceylon Rifles, LI = Light Infantry, f = Foot, RWF = Royal Welsh Fusiliers, Yorks & L = York and Lancaster, NSFen. = Nova Scotia Fencibles.

Also Bt Maj. Whether he had also received brevet promotion to Major; only noted when he subsequently received brevet promotion to Lieutenant-Colonel. Some Officers received brevet promotion to Colonel, but this has not been recorded.

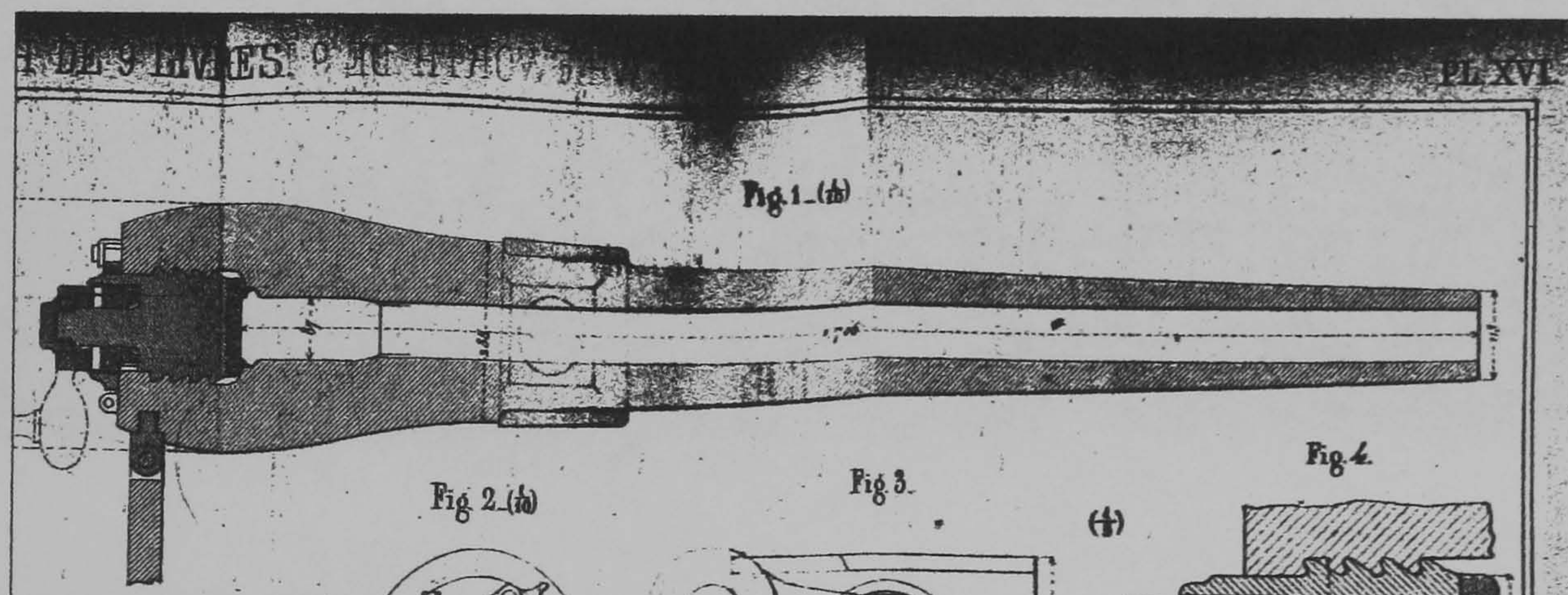
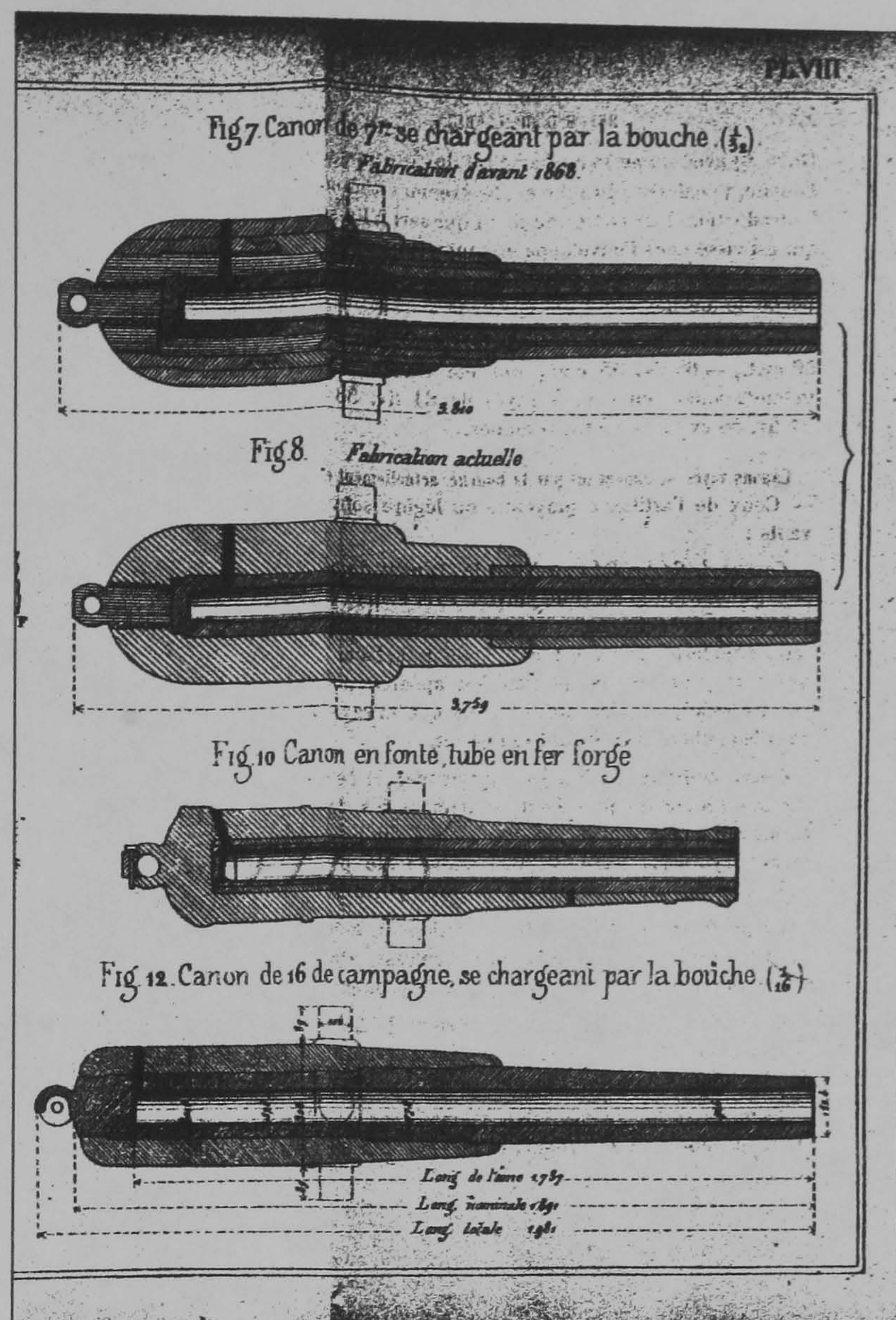
Surname	First Name	Date of Birth	Birth Country	Fathers Status	School	First Commission	Entry Method	Corps	Brevet Lt.Col	Age At Brevet	Also Bt Mal	Regtl Lt.Col	Age At Regtl Lt.Col	Final Rank	V/C
Adye	John	01/11/1819	England	MO, Major		13/12/1836	W	RA	12/12/1854	35	Yes	29/08/1857	37	General	
Ainslie	Charles	01/01/1808	Scotland	MO, Lt. Col.		22/10/1825	S	RB				22/10/1847	39	General	
Airey	Richard	01/01/1803		MO, Lt. Gen.	Dr Hooker's, Rottingdean	15/03/1821	D	34f				10/02/1838	35	General	
Airey	James	06/09/1812	England	MO, Lt. Gen.		11/02/1830	D	30f				17/07/1854	41	General	
Alderson	Henry	22/05/1834	Other	MO, Lt. Col.	Staton and Mayer's, Wimbledon	23/06/1852	W	RA			No	01/10/1877	43	Lt. Gen.	
Alison	Archibald	21/01/1826	Scotland	Academic		03/11/1846	D	72f			No	24/03/1858	35	Maj. Gen.	
Ardagh	John	09/08/1840	Ireland	Cleric/Academic		01/04/1859	W	RE	18/11/1882	42	Yes	17/12/1886	46	Maj. Gen.	
Baden-Powell	Robert	22/02/1857	England	Cleric/Academic	Charterhouse	01/01/1876	D	13H	01/01/1896	39	No	01/01/1897	40	Lt. Gen.	
Baker	Valentine	04/01/1827	England	Merchant	The College S, Gloucester	01/08/1848	D	Ceylon R				30/03/1860		Col.	
Baring	Evelyn	26/02/1841	England	MP	Ordinance S., Carshalton	22/06/1858	W	RA			No			Captain	
Beil	George	17/03/1794	Ireland	Gent		11/03/1811	D	34f						General	
Biddulph	Robert	26/08/1835	England	MP		22/08/1853	W	RA	01/01/1864	28	Yes	15/01/1864	28	General	
Biddulph	Thomas	29/07/1809	England	Gent		07/10/1828	D	LG	06/08/1856	42	Yes			General	
Bolton	Michael		England	Gent		26/04/1844	W	RA	15/06/1877	46	Yes	10/08/1864		General	
Brackenbury	Francis	01/01/1831	England	Dr/Surgeon		04/09/1857	D	G Cst Art			No			Col.	
Brackenbury	Charles	07/11/1831	England	MO, Lieut		19/12/1850	W	RA				15/01/1876	44	Maj. Gen.	
Bromhead	Henry	01/09/1837	England	MO, Lieut	Eton	07/04/1856	W	RA	23/10/1875	36	Yes	15/12/1882	45	General	
Buller	Gonville	29/08/1845	Other	MO, Major	Magnus GS, Newark	20/04/1867	D	24f						Major	Yes
Burgoyne	Redvers	07/12/1839	England	MP	Eton	23/05/1858	D	60r	11/11/1878	38	Yes			General	Yes
Butler	John	27/07/1782	England	MO, Lt. Gen.	Dr Quinn's, Dublin	29/08/1798	W	RE	27/04/1812	29	Yes	20/12/1814	32	FM	
Callwell	William	31/10/1838	Ireland	Gent	Haileybury	17/09/1858	D	69f	21/04/1880	41				Lt. Gen.	
Cambridge	Charles	02/04/1859	England	Gent		/01/1878	W	RA	14/03/1905	41	No			Maj. Gen.	
Chard	John	21/12/1847	England	Royal	Abroad		D	17LD				01/11/1837	18	FM	
Chesney	Charles	29/09/1826	Ireland	MO, Capt	Plymouth New GS	15/07/1868	W	RE			No	08/01/1893	45	Col.	Yes
Chesney	George	30/04/1830	England	MO, Capt	Blundells	18/08/1845	W	RE				01/03/1868	41	Col.	
Claremont	Edward				Blundells	08/12/1848	A	Bengal E	14/06/1869	39	Yes	01/04/1874	44	General	
Clarke	George	04/07/1848	England	Cleric/Academic	Wimbledon	09/02/1838	W	1f	14/09/1855		Yes			Lt. Gen.	
Cley	Cornelius	13/02/1838	Ireland	Merchant		15/07/1868	W	RE				01/04/1894	45	Col.	
Clifford	Henry	12/09/1826	England	Aristocrat		05/03/1868	S	32f	29/11/1879	41	Yes			Maj. Gen.	Yes
Clive	Edward					07/08/1846	D	RB	13/04/1858	31				Maj. Gen.	
Codrington	William	29/11/1804	England	NO, Admiral		18/08/1854	W	RB				1876	28	FM	
Colborne	John	16/02/1778	England	Gent.	Christ's Hospital	22/02/1821	D	CG				07/08/1880		Maj. Gen.	
Colley	George	01/11/1835	Ireland	Aristocrat		10/07/1794	S	20f			No	08/07/1836	31	General	
Connaught	Arthur	01/05/1850	England	Royal	Private	28/05/1852	S	2f	15/05/1873	37	Yes	02/02/1809	30	FM	
Conolly	James					1868	W	RE						Maj. Gen.	
Crealock	Henry	31/03/1831	England	Gent.		17/08/1836	D	5DG						FM	
Crealock	John	01/01/1837	England	Gent	Rugby	13/10/1848	D	80lt	20/07/1858	27	Yes	26/12/1856		Maj. Gen.	
de Ros	William	01/09/1797	England	Aristocrat	Rugby	13/10/1854		85f				11/11/1878	41	Lt. Gen.	
Dickson	Collingw'd	20/11/1817	Other	MO, Maj. Gen.	Westminster	29/03/1819		LG				08/09/1831	34	General	
Douglas	Charles	17/07/1850	Other			18/12/1835	W	RA	20/06/1854	36	Yes	23/02/1856	38	General	Yes
Duncan	Francis	04/12/1836	Scotland	Lawyer		16/12/1869	D	92f				1895	45	General	
Durnford	Anthony	24/05/1830	Ireland	MO, General	Aberdeen GS	24/09/1855	DX	RA	01/07/1881	44		01/10/1882	45	Col.	
Eardley Wilmot	F					27/08/1848	W	RE				11/12/1873	43	Col.	
Elles	Edmond					11/03/1819	W	RA				09/11/1846		Lt. Gen.	
Ellice	Charles	10/05/1823	Other	MO, General		15/01/1867	W	RA	07/12/1888		Yes			General	
Fox Strangways	Walter					10/05/1839	S	CG				08/08/1851	28	General	
French	John	26/09/1852	England	NO, Commander		19/06/1850	W	RA				08/09/1875		Col.	
Galloway	Patrick				Dartmouth	23/02/1874	M	8H	07/02/1885	32			36	FM	
Galtou	Douglas	07/02/1822	England	Gent		01/10/1857	W	RA			No	01/10/1884		Lt. Gen.	
Gleig	George	20/04/1796	Scotland	Cleric	Rugby	18/12/1840	W	RE						Chaplain Gen	
Goodenough	William					1811		85f						Lt. Gen	
Gordon	Charles	28/01/1833	England	MO, Lt. Gen.	Rugby	19/12/1849	W	RA	25/03/1869		Yes	13/01/1875		Lt. Gen	
Graham	Gerald	27/06/1831	England	GP	Taunton	25/08/1852	W	RE	02/1864	31	Yes			Maj. Gen	
Graham	Lumley					18/08/1850	W	RE	15/02/1861	29	Yes	27/09/1876	45	Lt. Gen	Yes
Grant	James	22/07/1808	Scotland	Gent	Edinburgh HS	13/08/1847		18f	06/06/1856					Col.	
Grant	Robert	10/08/1837	Other	Gent.	Harrow	29/08/1826	D	9L	07/06/1849	40		29/04/1850	41	General	
Grenfell	Francis	29/04/1841	Wales	Gent.		23/10/1854	DX	RE			No	01/07/1878	40	Lt. Gen	
Grierson	James	27/01/1859	Scotland	Merchant	Milton Abbas School, Dorset	1859	D	60R	1879	38	Yes			FM	
Haines	Frederick	10/08/1819	England	MO, Commissary-Gen.	Glasgow Academy	21/06/1839	D	4f	02/08/1850	31	Yes	24/04/1855	35	FM	
Hale	Lonsdale				Midhurst	02/12/1853	W	RE				1877	44	Col.	
Hamilton	Ian	16/01/1853	Other	MO, Lt. Col.	Wellington	24/04/1873	S	12f	1887	34	Yes			Col.	
Hamley	Edward	27/04/1824	England	NO, Vice-Adm.	Bodmin GS	11/01/1843	W	RA	02/11/1855	31	Yes	19/03/1884	39	General	
Hamley	William		England	NO, Vice-Admiral		05/08/1833	W	RE				10/06/1856		Col.	
Havelock-Allen	Henry	06/09/1830	Other	MO, Maj. Gen.	Dr Outberr's, St John's Wood	31/03/1848	D	38f	28/04/1859	28	Yes			Lt. Gen	Yes
Henderson	George	02/06/1854	England	Cleric/Academic	Leeds GS	01/05/1878	S	Yorks & L				23/12/1899	45	Col.	
Herbert	Peicy	15/04/1822	England	Aristocrat	Eton	17/01/1840	S	43lt	28/05/1853	31		19/02/1858	35	Lt. Gen	
Hills	John	19/09/1834	Other	Planter	Edinburgh Acad.	18/08/1854	A	Bengal E				01/10/1877	43	Maj. Gen	
Hills-Johnes	James	20/06/1833	Other	Planter	Edinburgh Acad.	11/08/1853	A	Bengal A	15/08/1868		Yes			Lt. Gen	Yes
Horne	Robert	29/12/1837	Other	MO, Major		07/04/1858	W	RE	01/04/1874	35				Col.	
Horne	Henry	19/02/1861	Scotland	MO, Major	Harrow	19/05/1880	W	RA	16/03/1905	41	No	11/1905	44	General	
Horsford	Alfred		England	Gent		12/07/1833	W	RA	28/05/1853			02/02/1855		General	
Hozier	Henry	20/02/1838	Scotland	Gent	Rugby	/10/1857	W	RA						Major	

Hozier	John	09/09/1856	England	Gent.		17/12/1858	D	2D	01/01/1889		33		21/09/1880	Lt.-Col.
Hunter	Archibald	15/11/1814	England	Gent.	Glasgow Acad.	06/1874	S				33	Yes		General
Inglis	John	10/09/1821	Other	Cleric		02/08/1833	D	32f			34		20/02/1855	Maj.-Gen.
Jervois	William	24/08/1850	England	MO, General	Mr Barry's, Woolwich	19/03/1839	W	RE	13/02/1861		39	Yes	01/04/1862	Lt.-Gen.
Kitchener	Herbert	05/08/1830	Ireland	MO, Lt.-Col		04/01/1871	W	RE	15/08/1885		35			FM
Leahy	Arthur	26/01/1817	Ireland	Gent.	Corpus Christi Hall, Maidstone	27/06/1848	W	RE	29/11/1868		38	Yes	10/12/1873	Col.
Lefroy	John	04/05/1830	England	Cleric		19/12/1834	W	RA				No	20/09/1855	Maj.-Gen.
Lennox	Wilbraham	01/01/1832	England	Aristocrat		27/06/1848	W	RE	26/04/1859		28	Yes	10/12/1873	Lt.-Gen.
Lloyd-Lindsay	Robert	01/08/1816	England	MO, General	Eton	1850	D	SFG	01/02/1905		27	Yes	21/09/1854	Lt.-Col.
Lysons	Daniel	28/10/1845	England	Cleric	Shrewsbury	26/12/1834	S	1f				No		General
Lyttelton	Neville	10/08/1819	England	Aristocrat	Eton	1865	D	RB	1882		37			General
MacDougall	Patrick	01/01/1838	Other	MO, Lt.-Col.	Edinburgh Military Academy	13/02/1836	S	Ceylon R	17/07/1855		35			General
Majendie	Vivian	21/06/1819	England	Gent.		23/10/1854	DX	RA					13/02/1881	Col.
Mansfield	William					27/11/1835	S	53f					09/05/1851	General
Maude	Frederick					13/03/1840		3f	02/11/1855					General
Maunce	John	24/05/1841	England	Cleric/Academic	Addiscombe	18/12/1861	W	RA	18/11/1882		41	Yes	23/05/1890	Maj.-Gen.
Methuen	Paul	01/09/1845	England	Aristocrat	Eton	22/11/1864	M	SFG					15/07/1878	FM
Murray	Archibald	21/04/1860	England	Gent.	Cheltenham	13/08/1879	S	27f	1890		30	No	1891	General
Newdigate	Edward					29/05/1842	D	RB				No	30/04/1861	Maj.-Gen.
Nicholson	William	02/03/1845	England	Gent.	Leeds[Grammar School	01/01/1865	W	RE	1888		41	Yes		FM
Noble	William	14/10/1834	Ireland	Cleric	Private	06/03/1856	DX	RA					01/11/1882	Maj.-Gen.
Quvry	Henry					17/10/1833	D	3LD	19/01/1858			No		Col.
Paulet	William	07/07/1804	England	Aristocrat	Eton	01/02/1821	D	85ll					21/04/1843	FM
Plumer	Herbert	13/03/1857	England	Gent.	Eton	11/09/1876	D	65f	/12/1896		39			General
Ponsonby	Henry	10/12/1825	Other	MO, Maj.-Gen		27/12/1842	D	49f				Yes	31/08/1855	Maj.-Gen.
Porter	Whitworth	25/09/1827	England	Gent.		18/12/1845	W	RE	23/08/1866		38		14/12/1868	Maj.-Gen.
Primrose	Everard					11/04/1868		GG					14/12/1878	Col.
Roberts	Frederick	30/09/1832	Other	MO, General	Eton	12/12/1851	A	Bengal A	15/08/1868		35	Yes	17/09/1839	FM
Rose	Hugh	06/04/1801	Other	MP		08/06/1820	D	93f				Yes		FM
Ross	John	18/03/1829	England	MO, FM		14/04/1846	D	RB	20/07/1858		29			General
Scarlett	James	01/01/1799	England	Aristocrat	Eton	26/03/1818	D	18H					03/07/1840	General
Simmons	Lintorn	12/02/1821	England	MO, Captain		14/12/1837	W	RE	12/12/1854		33	Yes	31/01/1860	FM
Smith	Robert	18/08/1835	Scotland	GP	Kilmarnock Academy	24/09/1855	DX	RE	01/07/1881		46		31/12/1881	Maj.-Gen.
Smith-Dorrien	Horace	26/05/1858	England	MO, Colonel	Harrow	26/02/1878	S	95f	16/11/1898		40			General
Smyth	Henry	25/11/1825	England	NO, Admiral	Bedford GS	20/12/1843	W	RA				No	31/08/1865	General
Stotherd	Richard	17/07/1843	Ireland	MO, General	University College S.	02/05/1847	W	RE				No	03/08/1872	Maj.-Gen.
Symons	William	01/06/1833	Other	Prof.		03/08/1863	D	24f	17/05/1886		42	Yes	31/01/1891	Maj.-Gen.
Teesdale	Charles	01/06/1833	England	MO, Lt.-Gen.		18/08/1851	W	RA	14/12/1868		35	Yes	23/09/1875	Maj.-Gen.
Thesiger	Frederick	31/05/1827	England	Aristocrat	Eton	31/12/1844	D	RB	02/11/1855		28		28/08/1857	General
Tyler	Charles					18/06/1851	W	RA					07/02/1877	Col.
Vincent	Howard	31/05/1849	England	Cleric	Westminster	22/07/1868	S	RWF						Lt.*
Walker	Beauchamp	07/10/1817	England	Gent.	Winchester	27/02/1836	D	33f	09/11/1855		38		07/12/1858	General
Walpole	Robert	01/12/1808	England	Aristocrat	Eton	11/05/1825	D	RB					02/07/1847	Lt.-Gen.
Warren	Charles	07/02/1840	Ireland	MO, Maj.-Gen.	Cheltenham	23/12/1857	W	RE	11/11/1878		38		03/11/1884	General
Webber	Charles	05/09/1838	Ireland	Cleric		20/04/1855	W	RE				No	24/01/1880	Maj.-Gen.
Wetherall	George	01/01/1788	England	MO, General	Military College, Farnham	09/07/1803	D	NS Fen.	11/12/1824		38	Yes	07/08/1828	General
Wetherall	Edward			MO, General		27/06/1834		1f	17/07/1855			Yes		Maj.-Gen.
White	George	06/07/1835	Ireland	Gent.		1853	S	27f	1879		44			FM
Williams	Fenwick	04/12/1800	Other	MO, Commissary-Gen.		14/07/1821	W	RA	31/03/1848		47	Yes	18/09/1853	General
Wilson	Charles	14/03/1836	England	Gent.	Cheltenham	24/09/1855	DX	RE	19/04/1879		43		31/12/1881	Maj.-Gen.
Wolseley	Garnet	06/04/1833	Ireland	MO, Major		03/12/1852	D	12f	08/04/1859		26	Yes		FM
Wood	Evelyn	09/02/1838	England	Cleric	Dartmouth	07/09/1855	D	13LD	19/01/1873		34	Yes	13/11/1878	FM
														Yes

APPENDIX C.

Table showing the number of horse and field batteries armed with each nature of gun in use on five dates between 1860 and 1899.

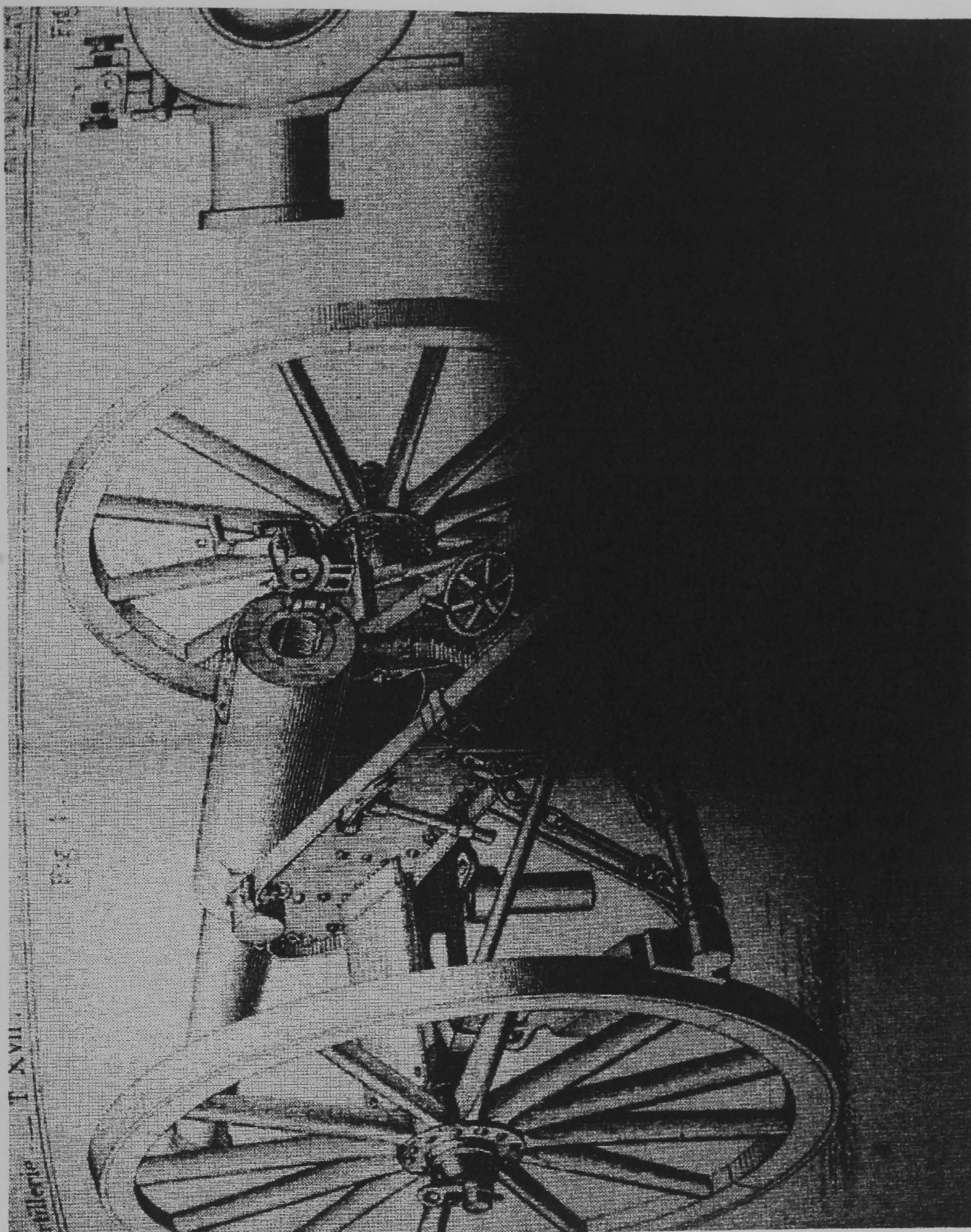
Year.	Home or Indian Establish-ment.	Horse or Field Battery.	Nature of gun or howitzer.												Remarks.	
			S.B.	6 pr.	9 pr.	12 pr.	7 pr.	9 pr.	9 pr.	16 pr.	18 pr.	12 pr.	15 pr.	5" How.		
				R.B.L. (Armstrong).			R.M.L.			B.L.						
1863	Home ...	Horse Field		1*		10	25									*In New Zealand.
	Indian ..	Horse Field	21 46				1									
1872	Home ...	Horse Field					30	1†	16 10							†In South Africa.
	Indian ...	Horse Field	8 29				7 9		5							
1881	Home ...	Horse Field								18 9	22	1				
	Indian ...	Horse Field					2			15 47						
1890	Home ...	Horse Field									2	1 12	8 24			
	Indian ...	Horse Field								5 86			6 6			
1899	Home ...	Horse Field												10	48 8	
	Indian ...	Horse Field													11 40	1



Cannon. Sections showing construction of Armstrong muzzle-loading 7 and 16 pounders and Whitworth breech-loading 9 pounder, 1873.

Revue d'Artillerie (Paris, Berger-Levrault), Vol.1, 1873, Plate VIII and Vol.3, 1874, Plate XVI

Illustration 2



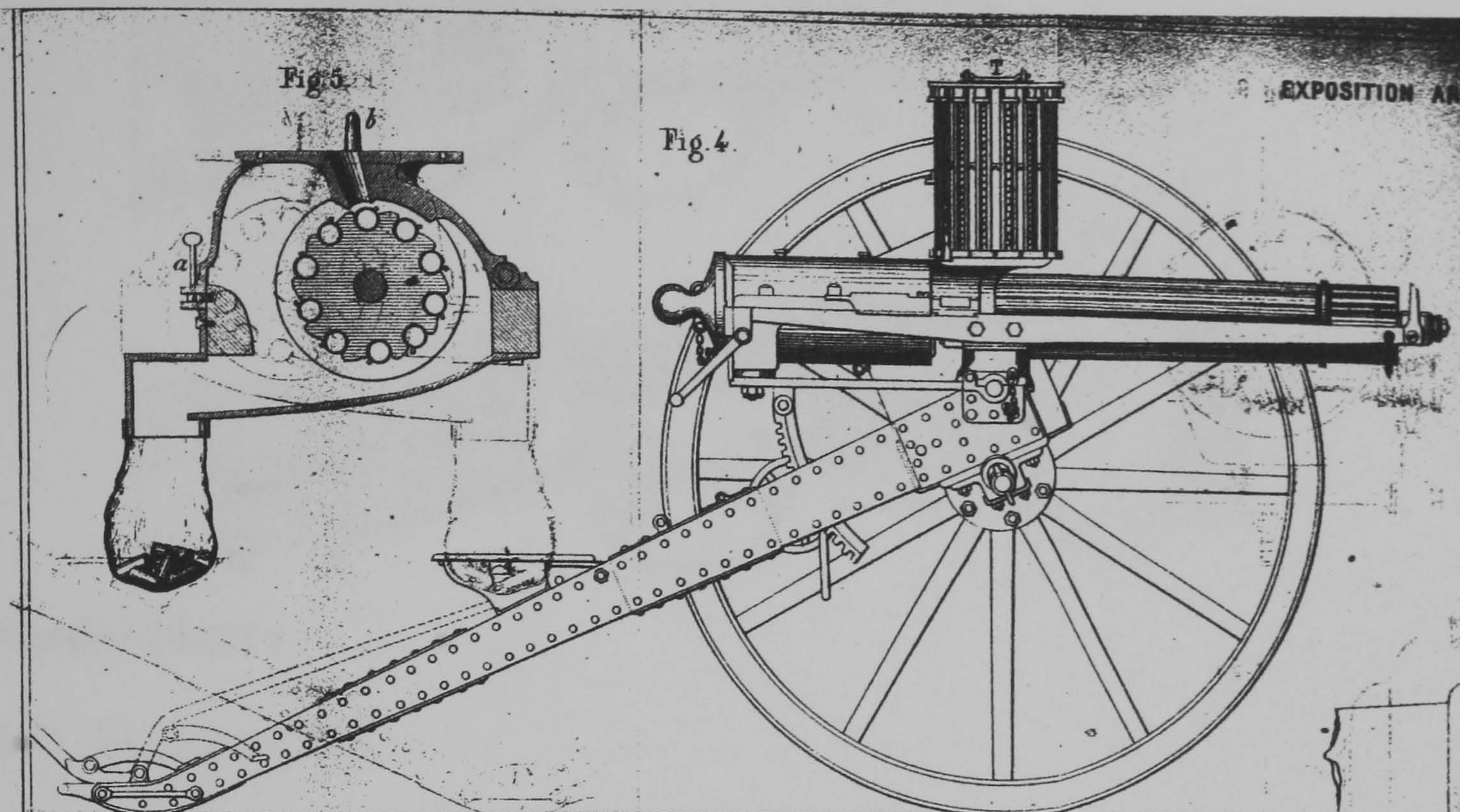
Cannon. Armstrong breech-loading 12 pounder.

Revue d'artillerie, Vol. 17, 1880-81. Plate VI



Machine Guns. Montigny Mitrailleuse.

Illustrated London News, 13 August 1870



Gatling, made at Elswick by Armstrong.

Revue d'artillerie, Vol. 3, Plate XI

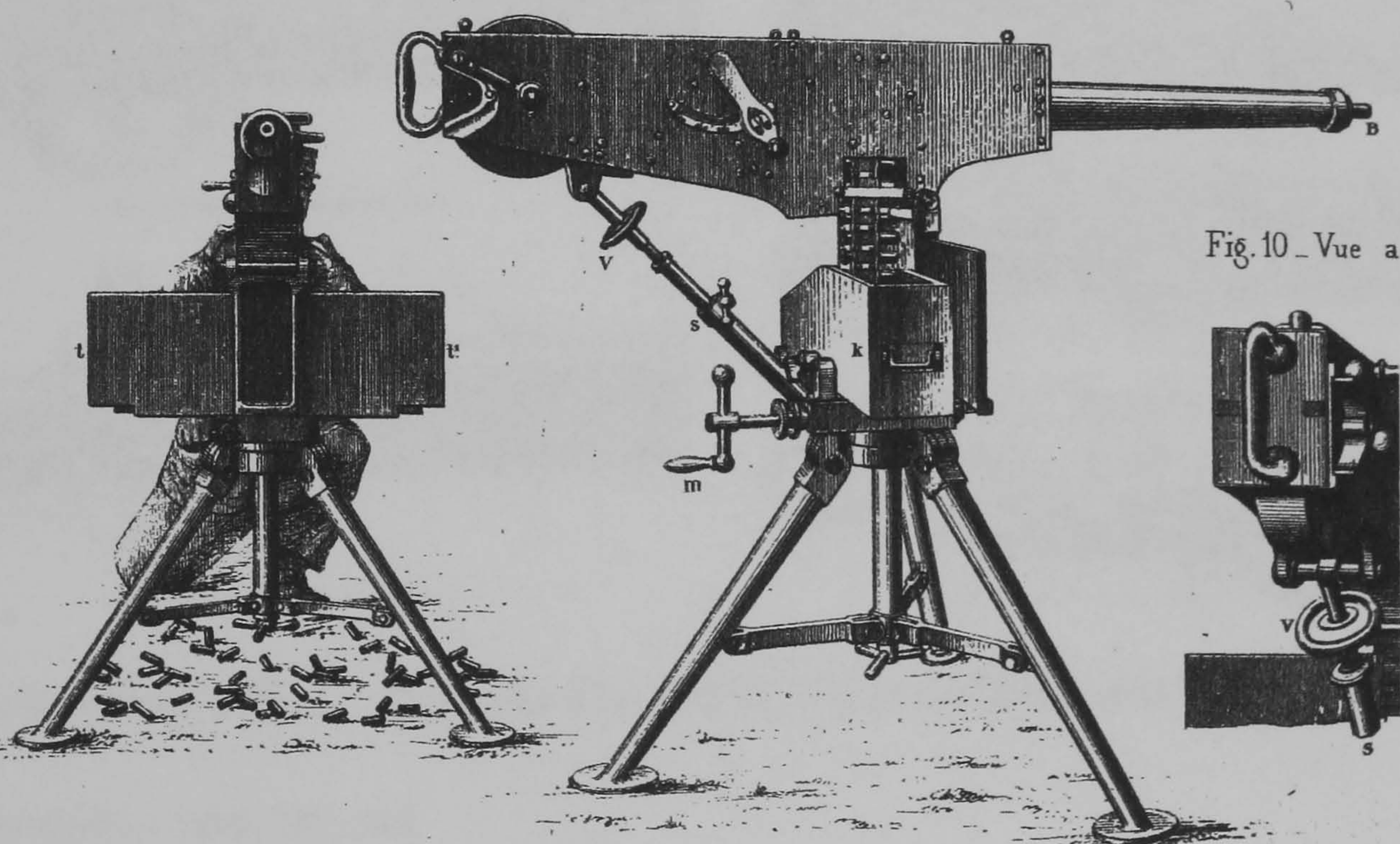
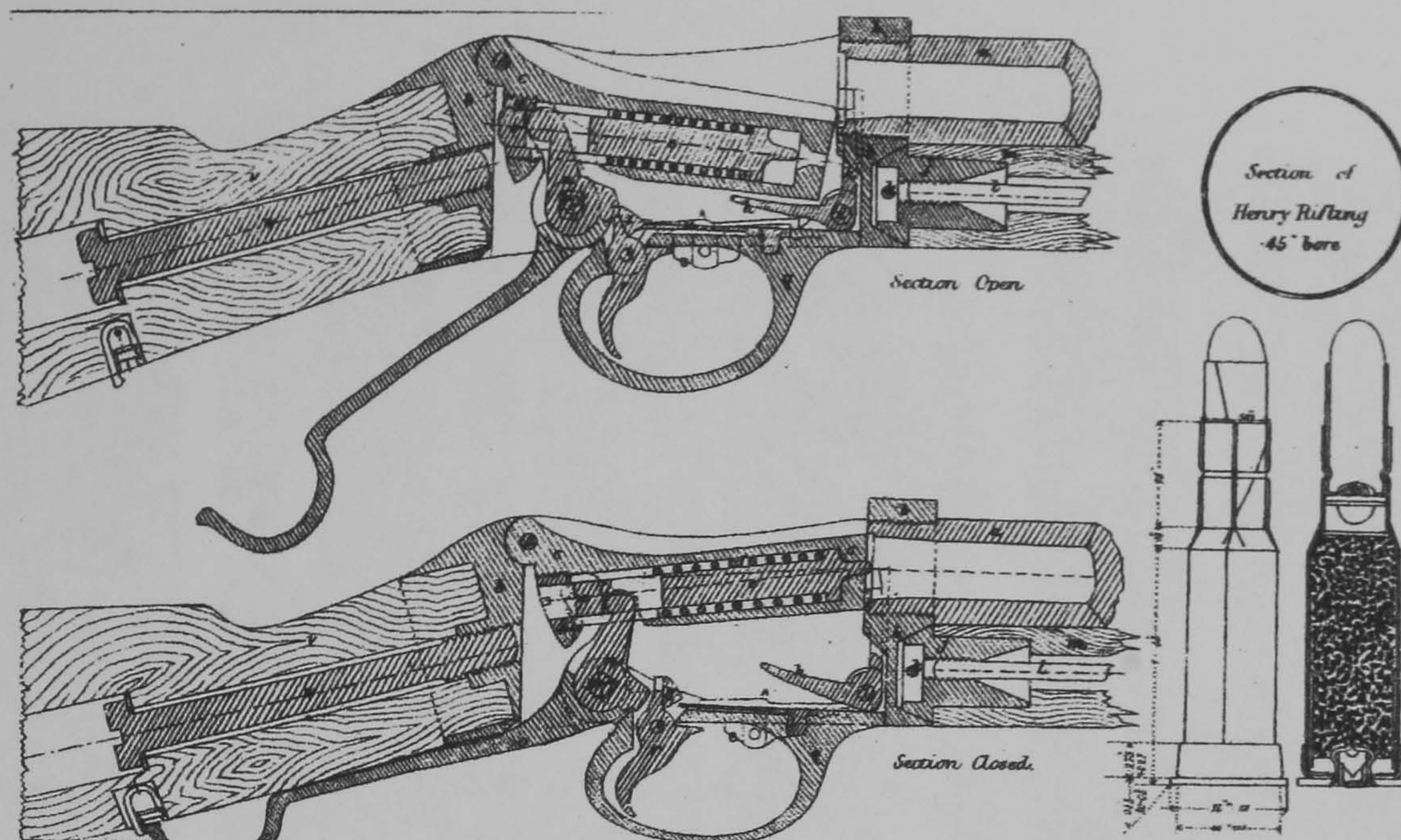


Fig. 10 - Vue a

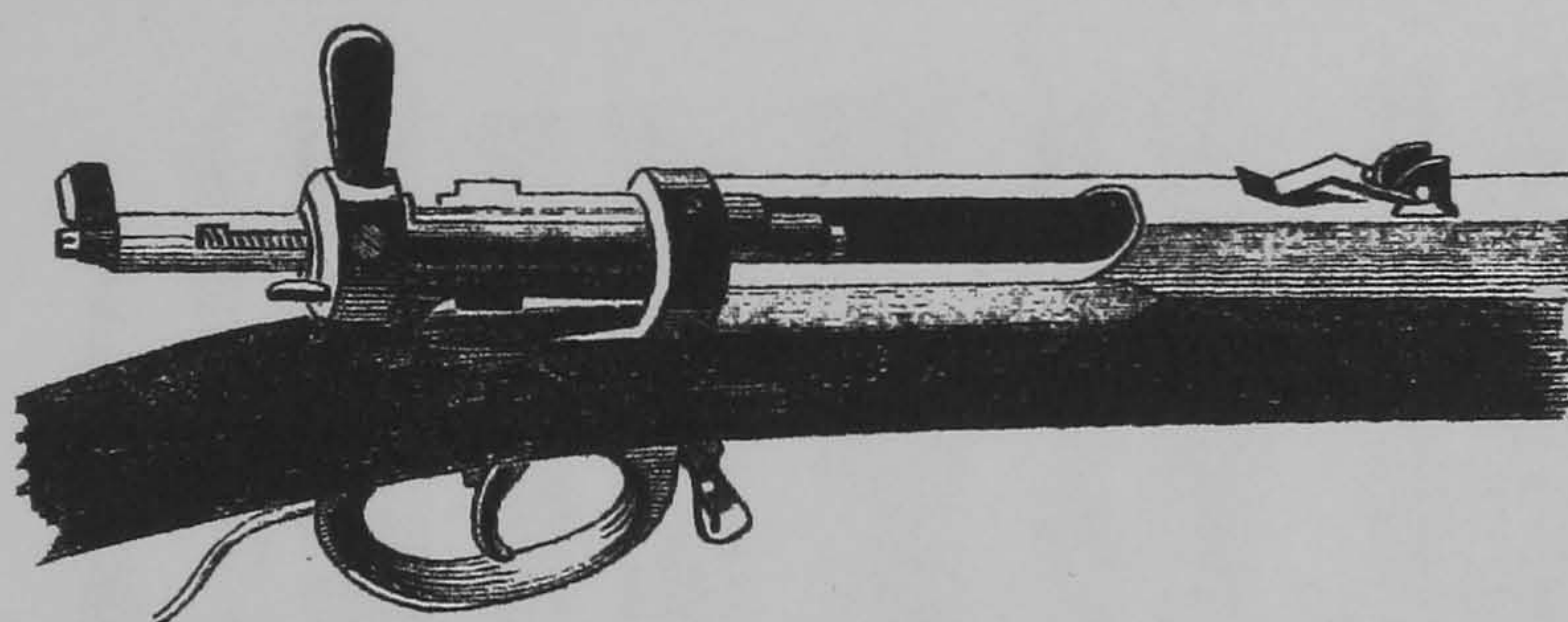
Machine Guns. Maxim.

Revue d'artillerie, Vol. 25, Plate X

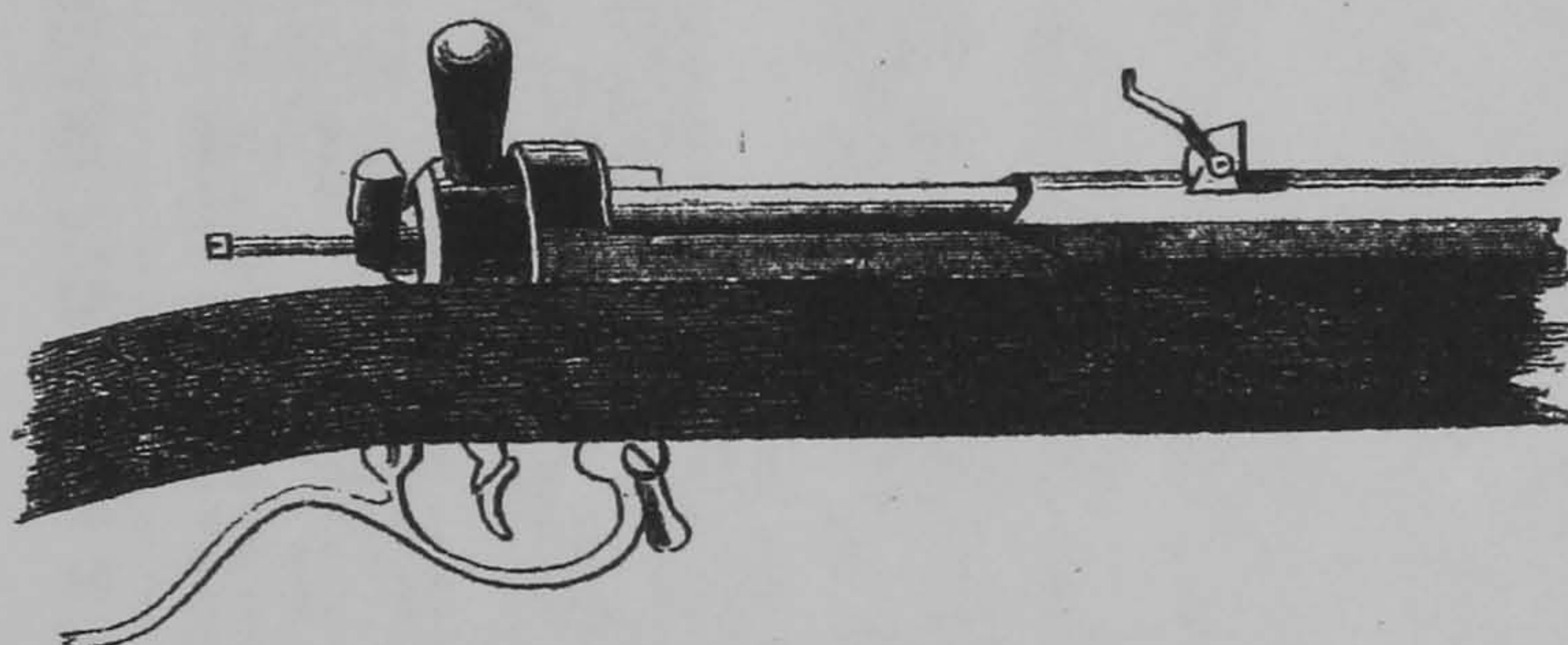


Martini-Henry.

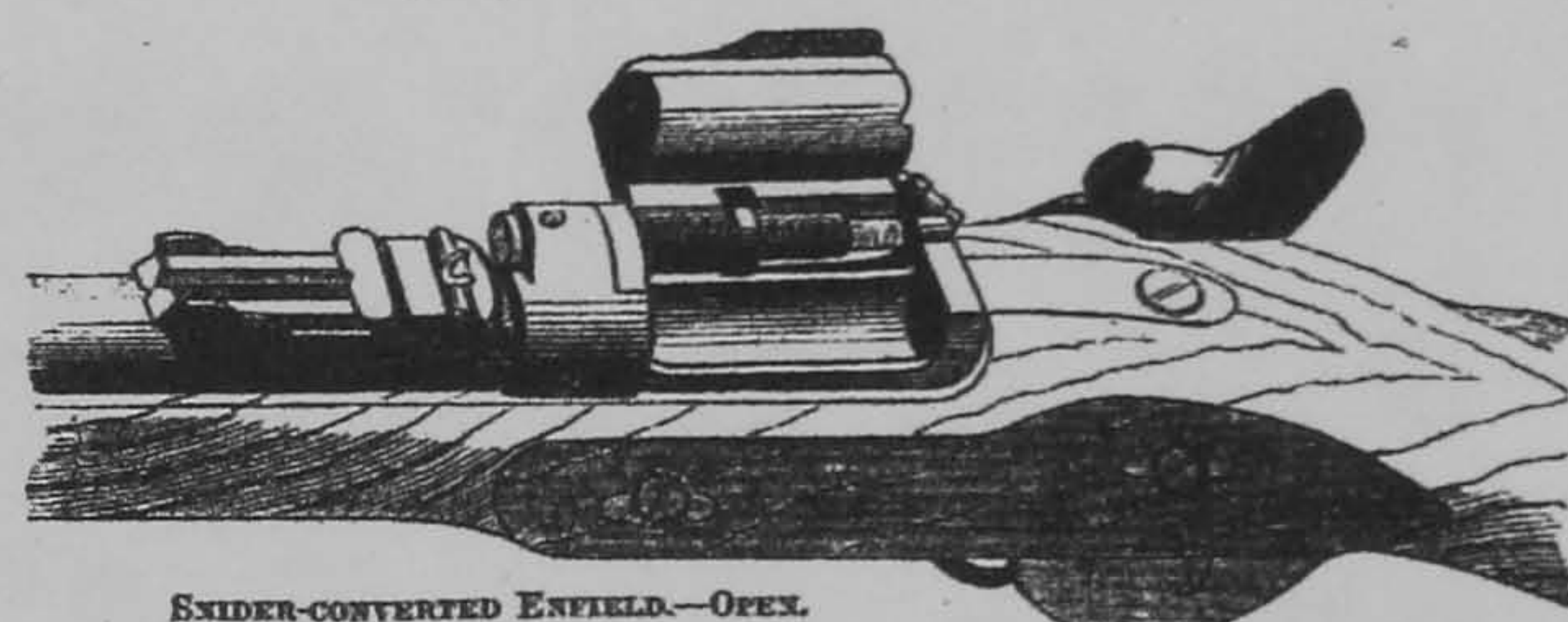
JRUSI, Vol. 15, Plate XVIII



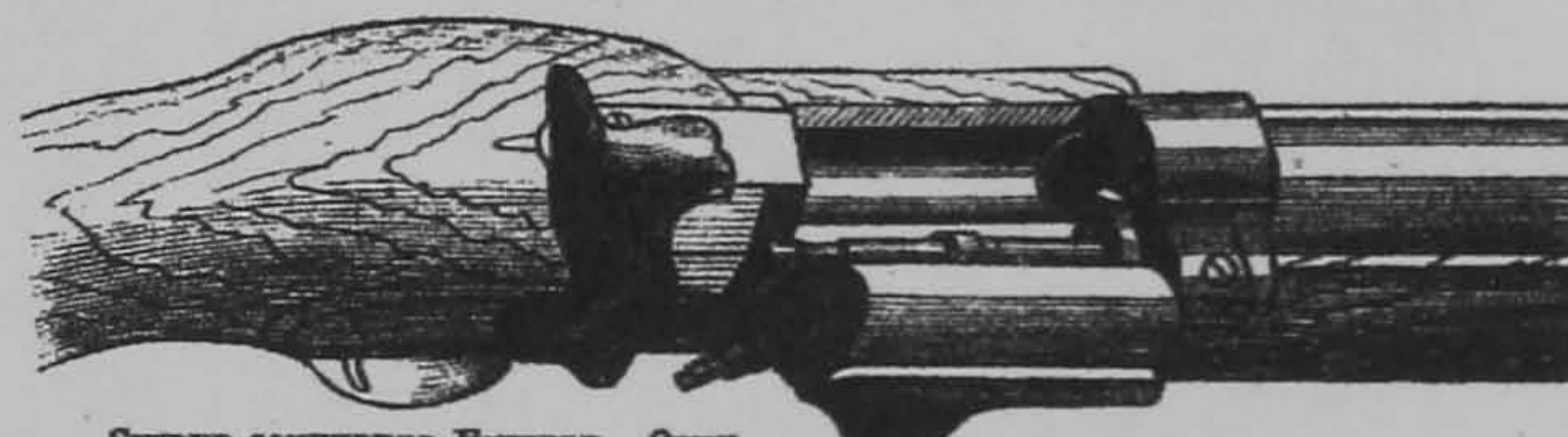
NEW PATTERN NEEDLE-GUN.—OPEN.



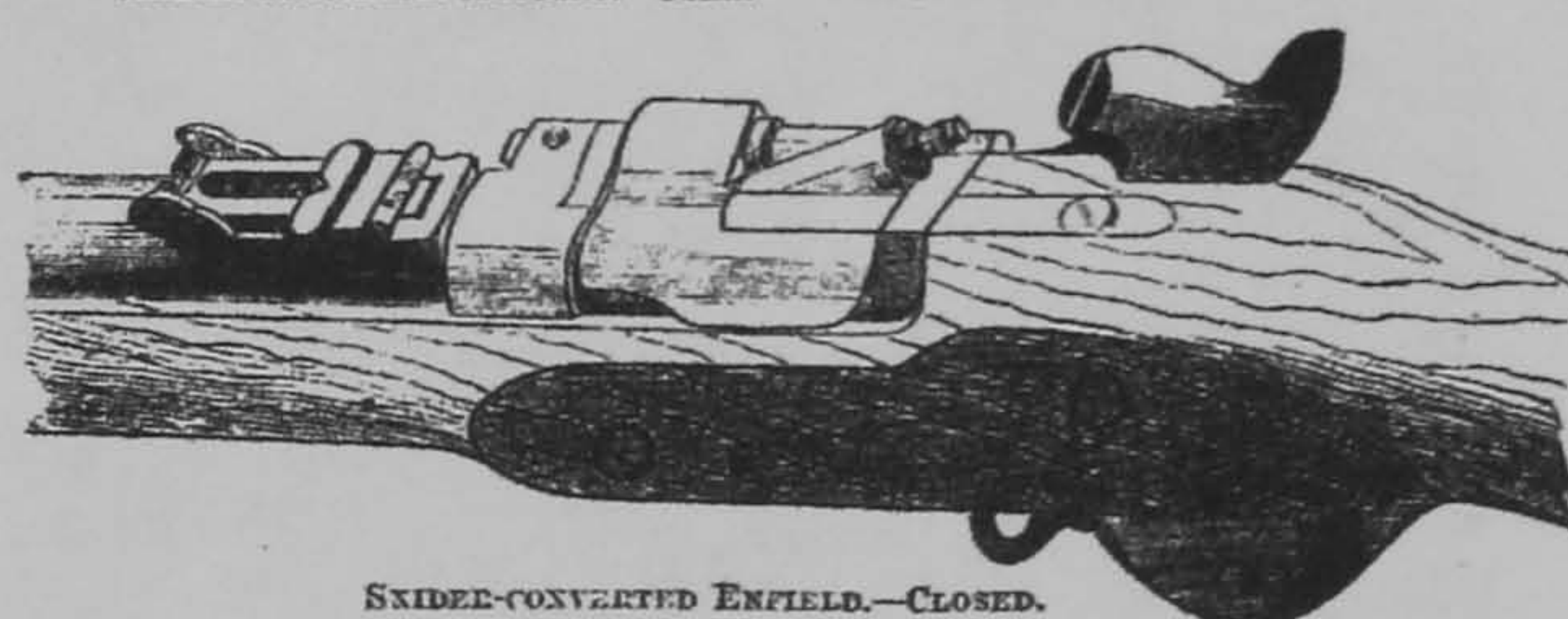
NEW PATTERN NEEDLE-GUN.—CLOSED.



SNIDER-CONVERTED ENFIELD.—OPEN.



SNIDER-CONVERTED ENFIELD.—OPEN.



SNIDER-CONVERTED ENFIELD.—CLOSED.

Breech-loading rifles. Needle Gun (left) Snider-Enfield (right)

Cornhill, September 1866, 357, 348

Clery's Minor Tactics. Publisher's Booklist

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